R.O. Barbados

ADVISORY

DEPARTMENT OF THE IMPERIAL COLLEGE

OF TROPICAL AGRICULTURE.

IMPERIAL MYCOLOGICAL
22 JUL 1939
INSTITUTE

REPORT

ON THE

DEPARTMENT OF AGRICULTURE

ST. LUCIA,

1937.

ISSUED BY THE COMMISSIONER OF AGRICULTURE

[Price Sixpence.]

St. Lucia.
Printed by the Government Printer at the Government Printing Office,
1939.

FORWARDING DISEASED SPECIMENS FOR EXAMINATION.

PLANTS.

A few fragments of a diseased plant are of practically no value for scientific investigation. Sufficient material should always be sent so that the primary cause of the trouble may be located.

Full particulars should be given as to the nature and extent of the damage *done*, the part of the plant attacked, the nature of the soil, drainage, the prevalence of the disease, when it was first noticed, and whether any similar kind of disease has previously been observed in the neighbourhood.

Specimens of portions of plants attacked by fungi may be sent green, packed in a well ventilated box if the time taken for delivery is under 24 hours, but if delivery takes a longer time, all leaves or soft fruits should be placed in a bottle or corked tube containing a solution made of one part rum or methylated spirit and two parts water. As many stages of the disease as possible should be sent, with notes as to the nature of each stage.

All specimens should be accompanied by detailed particulars of the nature of the disease and shall be addressed to :—

THE DEPARTMENT OF AGRICULTURE,
CASTRIES.

INSECTS.

Observations and specimens of economic importance or otherwise will always be gladly received. The following directions should be observed in this respect :—

Living insects should be packed with a supply of the plant on which they are found feeding and the box should have some small holes pierced for the purpose of ventilation. These should be carefully packed in such a way as to prevent their becoming crushed in transit.

If it is desired to preserve specimens they should be put up in bottles with tightly fitting corks. Methylated spirits, diluted rum, etc., make excellent preserving fluids.

Scale insects, etc., should be forwarded on the portion of the plant on which they are found.

If in doubt as to the best method of forwarding specimens, a letter should be sent asking for instructions and stating full details.

In all cases full particulars should be forwarded as to the nature and extent of damage done, along with any other important points that may have been noticed.

All specimens should be addressed to :—

THE DEPARTMENT OF AGRICULTURE,
CASTRIES.

ADVISORY
DEPARTMENT OF THE IMPERIAL
COLLEGE OF TROPICAL AGRICULTURE.

REPORT

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ST. LUCIA.
PRINTED BY THE GOVERNMENT PRINTER, AT THE GOVERNMENT PRINTING OFFICE, CASTRIES.
1939.

LETTER OF TRANSMITTAL.

TRINIDAD,
14th March, 1939.

Sir,

I have the honour to transmit herewith the Annual Report of the Agricultural Department, St. Lucia, for the year 1937.

2. Although total rainfall for the year was abnormally low, weather conditions were generally not unfavourable to agriculture.

3. The value of agricultural and allied products exported during 1937 amounted to £135,621, representing a continuation of the steady rise in the value of exports in the last four years.

4. The sugar industry is by far the most important industry of the Colony. The improved standard of production throughout the greater part of this industry was well maintained, and further increased yields may be anticipated in the near future. In 1937 sugar was sold at a slightly better price than in recent years. It is gratifying to record that it has been possible to arrange for the continuation of sugar-cane production at Vieux-Fort owing to the sale of the factory and group of estates to the Barbados Government for the settlement of emigrants from Barbados.

5. Although the value of exports of the lime industry in 1937 was slightly higher than in 1936, owing to the export in 1937 of a carry-over of lime oil from 1936, it must be recorded with regret that the industry has developed major troubles. Not only had marketing conditions become more difficult, but an unhealthy condition of a large percentage of the orchards and scattered trees became increasingly apparent as the year 1937 progressed. This unhealthy condition of limes in St. Lucia led to the appointment of a whole-time officer, in the person of Mr. R. G. Fennah, Entomologist, Citrus Pests Investigation, Windward and Leeward Islands, to conduct an investigation of citrus pests. His whole-time investigations began in June, 1937.

6. The coconut industry maintained its position of importance in spite of the relatively dry conditions prevailing throughout the greater part of the year. Production equalled and export values slightly exceeded the corresponding figures for 1936.

7. Better prices for cocoa in 1936 and the first part of 1937 stimulated planters to effect cultural improvements in the cocoa fields, but by the end of the year prices had again fallen to an uneconomic level and the interest temporarily aroused in this crop was soon lost.

8. The banana industry made fair progress during the year. Growers gained a better knowledge of the standard of fruit required, but difficult transport conditions continued to be their chief problem. It is gratifying to record that during the year the contract for sale of bananas to the Canadian Banana Company was renewed for a further period of five years.

9. In the fresh fruit industry, increased exports of mangoes and avocado pears were effected but low prices and poor marketing facilities offered no inducement for the development of grapefruit and orange orchards.

10. Attention was given by the Agricultural Department to maintaining the standard of livestock in the Island. A visit was paid to the Colony by Captain H. V. M. Metivier, Government Veterinary Officer of Trinidad to advise on veterinary and livestock matters. A bull calf of the Sussex breed was imported at the beginning of the year to improve the standard of the local beef animal.

11. A detailed account of the work conducted at Union Experiment Station and in the plant nurseries of the Agricultural Department is recorded as usual in the report.

12. The modified scheme for land settlement in a selected area adjacent to the Murray Road received final approval during the year. No development work, except the maintenance of the banana nursery and the tracing of by-roads, is possible until escheat proceedings are completed. The work was in hand at the end of the year.

13. An interesting development in the work of the Agricultural Department was the initiation of anti-soil erosion and soil conservation investigations. It is to be hoped that suitable facilities will be given to the Department to enable it to undertake this work on a scale consistent with the importance of the problem.

14. In March 1937, Mr. E. A. Walters proceeded on long leave, at the end of which he was transferred on promotion to an appointment in Gold Coast. During his fifteen years of service as Agricultural Superintendent Mr. Walters rendered most conscientious and valuable service to the Colony.

15. It is a matter of great credit to Mr. G. B. Gregory, who acted as Agricultural Superintendent during the remainder of the year, and to his reduced staff of agricultural officers that the work of the Department was carried on in a very satisfactory manner.

I have, &c.,

C. C. SKEETE,
Acting Commissioner of Agriculture.

His Excellency,
The Governor
of the Windward Islands,
Grenada, B.W.I.

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SAINT LUCIA.

Report of the Department of Agriculture for the year ended December 31, 1937.

SECTION 1. AGRICULTURE IN THE COLONY.

1. Weather Conditions and Agriculture.

Another year of abnormal weather conditions was experienced, the rainfall being far below average; distribution was also erratic for the first five months of the year, starting with an exceptionally wet January and then falling off rapidly to an extremely dry May; for the remainder of the year the distribution was more normal, though consistently below the average as regards quantity. As in 1936, economy in water utilisation was rendered necessary during the dry months, and estates possessing facilities for irrigation were obliged to make the fullest use of these facilities, with it may be noted, satisfactory results.

One redeeming feature was the freedom from flooding during the periods of peak rainfall; this feature proved beneficial to the sugar growing valleys in particular, and also rendered road transport conditions somewhat easier throughout the Colony owing to the absence of any severe damage by washing and land-slides.

Short spells of high winds occurred during the year and some damage was done to banana cultivations in the more exposed areas: no gales of hurricane force were experienced.

A more detailed analysis of Meteorological conditions is appended to this Report.

2. General Conditions and Progress in the Chief Industries.

I. THE SUGAR INDUSTRY.

The sugar industry experienced a welcome rise in price average during the year, the export market quotations being approximately £9 5 0 per ton as against £7 17 0 per ton recorded in 1936.

The reaping of the crop commenced in March, rather later than usual owing to the very wet conditions prevailing from the later months of 1936 up to the end of January. Production did not quite reach the record level of the previous year; this was due mainly to losses by flooding and excessive rotting of cane in the fields caused by the severe weather conditions experienced during the previous few months to which reference has already been made. In all, a total of 69,871·5 tons of cane were ground by the four factories, yielding 8,029·2 tons of sugars, as compared with 70,847 tons of cane and 8,117·6 tons of sugars in 1936. The extraction ratio was the same as in 1936, being 1 ton of sugar from 8·7 tons of cane; the highest and lowest extractions were 1 ton of sugar from 8·3 and 10·0 tons of cane respectively. The crop season ended in May; yields in general were good, some fields yielding over 50 tons of cane per acre in the valleys, while in the Vieux-Fort district excellent results with the seedling B. 2935 were recorded. The average tonnage for the Colony was approximately 22 tons of cane per acre. The area under cane was again estimated at 4,000 acres, of which 2,564 acres were reaped by the four factories during the crop; as usual, a small proportion of the total area comprised cane grown expressly for syrup production by small factories.

Further improvements must be recorded in drainage methods and general

field practice: the continued interest in better cane varieties, and the general tendency to do away with the old long ratoonage system can result in nothing but increased output; factory efficiency was well maintained.

The variety BH 10 (12) has kept its pride of place as the chief variety grown in all but the driest areas, though B. 726 also shows up well under the same conditions; in the dry areas B. 2935 has proved itself superior to Sc 12/4 and is being fully extended.

Molasses and Rum.

While there was a decrease in the quantity of molasses manufactured during the year, exports increased with better prices as shown in the table below. Rum production also showed a slight fall in comparison with 1936; as usual, the bulk of rum manufactured was retained for local consumption only a small surplus being exported. The production of fancy molasses was continued and further attention was paid by producers to improvement of grade: market conditions were definitely discouraging and difficulty was experienced in disposing of the crop. An important step was taken towards the end of the year, in November, when a meeting was held in Barbados between representatives of the Barbados shippers of fancy molasses and those of St. Vincent and St. Lucia; the result of this meeting was the granting of an export quota to the Colonies of St. Vincent and St. Lucia, this Colony's quota being as follows:—

1938	...	...	1,000 barrels
1939	...	...	1,500 ,,
1940	...	...	2,000 ,,

(1 barrel = approximately 45 Imperial gallons).

It was also agreed, in order to protect the Barbados product, that the price of St. Vincent and St. Lucia fancy molasses should not be more than 3 cents per wine gallon below that of the Barbados product. It is hoped that the fancy molasses industry can now look forward to better and quicker outlets for its product.

The following schedule shows comparatively the production and export of sugar manufactures for the five-year period 1933—37:—

Year	Tons of Cane*	Sugar.			Molasses.	Molasses & Syrup.		Rum.			Exported Total Value Sugar Products.
		Produced tons	Exported tons	Value £	Produced gallons.	Exported gallons	Value £	Produced gallons	Exported gallons	Value	
										£	£
1933	...	5,474	4,940	46,493	207,000	43,260	1,417	28,540	...	...	47,910
1934	...	5,498	4,730	39,396	194,000	23,080	1,431	25,239	3 1/10	3	40,830
1935	67,197	7,286	6,080	48,377	256,900	168,903	2,401	31,408	...	...	50,778
1936	70,847	8,118	7,707	60,358	280,951	107,128	1,132	34,551	4,091 2/3	649	62,139
1937	69,871	8,029	7,225	62,313	237,484	144,016	3,201	33,828	2,427	243	65,757

* Production from four Factories only and excluding canes for syrup, &c.

Difficulties in the Industry. St. Lucia was not without its share of the labour unrest that manifested itself in various Colonies during the year, but it is gratifying to record that the situation was kept well in hand and conditions were soon restored to normal: strikes occurred on the sugar estates during August, and eventually spread through the Colony; in addition to the fact that in most districts they were of short duration, the strikes were orderly and free from acts of violence; a Commission was at once appointed to investigate conditions, and, as a result of its recommendations, certain important legislation has been introduced for the improvement of conditions of employment of agricultural labourers.

As mentioned in the Report for 1936, the question of a land settlement

scheme at Vieux-Fort received much consideration during the year, and negotiations were under way for the purchase of the sugar growing areas, together with the factory, by the Government of Barbados: it is not inopportune to record here that these negotiations have been entirely successful and the property has been acquired by the Barbados Settlement Company Ltd. for the purpose of Land Settlement.

Housing. Further progress was made in the improvement of housing conditions mentioned in the last report and the erection of model cottages, each to house 4 families, is proceeding apace in the more important districts Further impetus was given to this important point by the recommendations of the Labour Commission appointed to investigate the August strikes, and it is confidently expected that the housing conditions of estate labour throughout the Colony will, in time, be materially improved.

II. THE LIME INDUSTRY.

In addition to continued losses from "Root disease" and Citrus Weevils (*Diaprepes* spp), weather conditions were not altogether favourable for the crop. The effects of a high infestation of *Diaprepes* during 1936 were emphasised by the dry weather conditions of the year under review and, in the drier areas especially, losses were high. Good use was made of irrigation facilities, where available, in maintaining the vigour of the trees for maximum production.

The crop in general was a late one. The heavy rains in January seriously affected the first flowerings, and it was not until March that anything like a promising crop of young limes was noticed, and this only on estates which, by general attention to cultivation and adequate drainage, could sooner counteract the earlier wet weather.

There was a general decrease in the exports of lime products for the 1937 crop, though the total export value is higher than in 1936 due to the fact that a substantial carryover of 1936 lime oils was not exported until 1937. Market conditions were again sufficiently remunerative to ensure that the lime crop was fully collected.

The total exported lime crop of the Colony, calculated as barrels of limes, amounted to 32,048 barrels for the period 1937, valued at £18,243, as compared with 22,569 barrels valued at £15,680 in 1936. The exported crops for the last ten years are shown below :—

Year.	Quantity Barrels.	Year.	Quantity Barrels.
1928 ...	56,186	1933 ...	44,019
1929 ...	34,483	1934 ...	45,000
1930 ...	42,844	1935 ...	38,189
1931 ...	50,339	1936 ...	22,569
1932 ...	44,762	1937 ...	32,048

The export production of the crop of the Colony for the five-year period 1933—1937 is shown in the following table :—

	Concentrated Lime Juice.		Raw Lime Juice.		Distilled Lime Oil.		H. P. Lime Oil.		Green Limes.		Pickled Limes.		Total Value £
	Quantity gals.	Value £	Quantity gals.	Value £	Quantity lb.	Value £	Quantity lb.	Value £	Quantity brls.	Value £	Quantity brls.	Value £	
1933	16,208	860	591	40	8,056	7,412	2,582	3,021	3,758	4,445	...	...	15,778
1934	3,371	228	10,525	471	13,406	12,275	1,251	1,868	6,001	7,010	...	...	21,852
1935	1,080	45	29,613	854	10,264	9,673	1,504	2,517	6,619	8,035	...	...	21,124
1936	3,817	160	34,171	1,405	5,463	6,091	810	1,047	5,731	6,977	...	...	15,680
1937	1,109	60	11,350	602	11,305	10,187	2,103	2,946	3,537	4,420	26	28	18,243

Conditions in the Industry.

Full use was made of the facilities offered by the Department for the replanting and supplying of fields damaged by "root disease" and citrus weevils, and the entire production of budded plants was utilised. Further observations on the inarching system adopted by some planters as described in the 1936 Report have shown that, so far, the results are entirely beneficial, but further observations are necessary before anything definite can be said as to the advisability of the system; the reverse of this system i.e. the inarching of young seedling limes with Sour orange stocks, has also been done in some cases, but it is generally recommended that only budded plants should be planted, and the use of seedlings limes is still not encouraged.

The principal points of interest in the industry during 1937 are dealt with under their respective headings.

Green Limes.

The green lime crop started somewhat later than usual, and was also reduced in quantity; adverse weather conditions in the early part of the year were responsible for poor returns from the early flowerings, and the crop was further adversely affected by pests and diseases as already mentioned.

Marketing conditions were not regarded as satisfactory, and a greater proportion of the crop than heretofore was left to ripen for oil production. The following table shows the local prices offering together with corresponding shipments of green limes for each month during 1937:—

——	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Local Prices per brl.	23-24*s.*	23-24*s.*	25*s.*	25*s.*	18-20*s.*	18-15*s.*	12*s.*	12*s.*	12*s.*	12*s.*	15*s.*	15-20*s.*
Exports (brls.)	61	101	122	327	901	783	489	290	201	112	64	86
Value of Exports	£79	£127	£159	£469	£1,158	£995	£576	£316	£233	£124	£79	£105

Exports to Canada declined some 15% in comparison with 1936; while results on the whole were satisfactory due to the fact that shippers now wait for definite orders instead of pushing out large lots on consignment, the market is as yet a limited one and very uncertain: the possibilities of stimulating demand for this product could well bear investigation.

The United States of America, as usual, offered the largest outlet for green limes but competition from Mexican and other limes seriously affected the local industry. Exports to the United States were some 51 per cent. lower than in 1936 due mainly to the fact that in the early months of the year, when the demand was good, the quantity offering was small owing to the late crop; from June onwards, when limes were available locally in quantity, there was a marked decline in demand, and few shipments were made. All shipments were made on the F.O.B. basis, and an average price of about $6.50 per barrel was obtained.

The United Kingdom cannot as yet be considered as a market for green limes, and very little business was done other than small shipments by one exporter: here again as with Canada, there is a need for investigating the possibilities of stimulating demand.

The Bermuda market has shown improvement as an outlet for green limes; it is felt, however, that this market is definitely limited and offers little opportunity for further exploitation.

The following table shows the destination of exports of green limes during 1937 as compared with 1936 :—

Destination.	1936.		1937.	
	Quantity brls.	Value £	Quantity brls.	Value £
Canada	573	685	485	605
United Kingdom	114	137	24	31
U.S. America	4,093	5,110	1,983	2,566
Bermuda	918	1,022	1,034	1,211
Barbados	10	5	9	5
Martinique	23	18	2	2
Total	5,731	6,977	3,537	4,420
Decrease in 1937	...	...	2,194	2,557

Lime Juice.

The markets for raw lime juice were very disappointing, and exports were some 66 per cent. lower than in 1936. The only business that was done was in extra quality filtered juice, and all shipments were forwarded accompanied by a certificate of purity and citric acid content supplied by the Department.

Quotations on the London market ranged around 2*s.* 6*d.* per gallon c.i.f. for the filtered juice, and exports to this market amounted to 1,356 gallons. The Canadian market rallied somewhat during the year, but at a time when supplies were somewhat curtailed owing to the late crop; exports to Canada amounted to 9,047 gallons.

Concentrated Lime Juice.

The total output of this product amounting to 1,109 gallons, was absorbed by the United Kingdom market. Prices were unattractive at approximately £5 10*s.* per pipe.

Lime Oils.

Lime oils have continued to be the mainstay of the lime industry, with distilled oil as the principal feature. The bulk of the oil was exported through the West Indian Lime Oil Sale Company, and returns were generally satisfactory.

As already reported, exports were considerably higher in 1937 due to a carry-over of oils in store from 1936. The Department continued to store and generally supervise the receipt and delivery of oil, and the sampling of all shipments is now a matter of routine. No complaints of defective shipments were brought to the notice of the Department during the year, though advice was given in some factories on minor points.

Export figures for distilled oil show that 11,305 lb., valued at £10,187 were shipped, the corresponding figures for handpressed oil being 2,106 lb. valued at £2,946. Quotations averaged around 22*s.* 6*d.* per lb. for distilled oil and 35*s.* per lb. for handpressed. As before the majority of the crop was converted to distilled oil.

III. THE COCONUT INDUSTRY.

The coconut industry has maintained its position as the third staple industry of the Colony, and the total export value was increased by £2,604 or some 20 per cent. over 1936. Plantations generally were affected by the dry conditions of the year, and there seemed to be an increase in the number of bud-rot cases seen and treated; rats also were responsible for losses of young

nuts, and a few cases of leaf stalk infested by the coconut weevil (described in the Annual Report of the Department for 1930 as *Polyderces zonatus*) were noted and destroyed. Scale insects were prevalent in certain areas, especially where drought effects were acute. In spite of adverse conditions, however, yields were on the whole satisfactory.

Coconut cultivation is still extending throughout the Colony, and quite a considerable area is now under young trees: further planting took place during the year, and better attention was paid to cultivation in established fields. Planting distances average around 30′×30′ but in many cases the planting of coconuts at 40′×40′ or 60′×60′ in lime fields, with the object of replacing present shade trees and wind breaks by economic trees, has been done.

Market conditions were somewhat better than in 1936, and exports moved freely throughout the year; monthly exports of nuts were as follows:—

Month.	No.	Value (£)
January	163,910	509
February	202,992	666
March	124,927	333
April	302,662	1,085
May	232,684	848
June	225,287	740
July	307,597	866
August	245,380	900
September	219,135	834
October	129,223	384
November	451,785	1,958
December	387,840	1,352

In all a total of 2,993,621 nuts, valued at £10,476, was exported, as compared with 3,409,621 nuts valued at £9,608 in 1936. While the number of nuts declined somewhat, the better prices obtained more than offset the deficiency, caused mainly by increased copra production. Canada, the United States of America and the United Kingdom were the most important markets, as shown in the schedule below:—

Destination.	Quantity.		Value.	
	1936.	1937.	1936.	1937.
Canada	1,680,410	1,500,128	5,168	5,762
U.S. America ...	1,127,852	773,540	3,053	2,709
United Kingdom ...	374,550	533,500	906	1,508
Barbados	196,815	148,844	377	357
Bermuda	28,194	37,010	100	139
Martinique	...	400	...	1
Anguilla	900	...	2	...
Antigua	900	...	2	...
Total Exports ...	3,409,621	2,993,422	£9,608	£10,476

Copra.

Copra production was further stimulated by the favourable market conditions that extended over from the later months of 1936, and a larger proportion of the coconut crop was made into copra; trade was primarily with the United Kingdom, closely followed by Barbados and Trinidad.

Exports amounted to 404 tons valued at £5,335 as compared with 306 tons valued at £3,561 in 1936.

The following table shows the quantity and value of exported coconut products during the last ten years :—

Year.	Coconuts No.	Value £	Copra tons.	Value £	Total Value £
1928	141,667	444	315	8,690	9,134
1929	295,983	1,032	359	9,878	10,910
1930	268,078	862	400	7,428	8,290
1931	367,350	1,178	498	5,869	7,047
1932	650,240	2,430	432	5,389	7,819
1933	1,199,808	3,527	542	5,167	8,694
1934	2,616,175	7,298	302	2,592	9,890
1935	2,814,965	7,632	215	1,871	9,503
1936	3,409,621	9,608	306	3,561	13,169
1937	2,993,422	10,476	404	5,335	15,811

The continued progress and expansion of this industry is a matter for some measure of satisfaction when the uncertainties of the market are taken into consideration.

IV. THE CACAO INDUSTRY.

As reported in the Report for 1936, the cacao industry benefited from a spectacular rise in prices, resulting in a marked revival in the industry; this was carried on into 1937, and considerable business was done in the first months of the year; a steady decline in the market commenced in May, however, and prices rapidly fell until, at the end of the year, the industry was more or less moribund; local prices dropped from 5*d*. to 1*d*. per lb., and, apart from work done during the period of revival, no further attention was paid to the crop other than normal harvesting. Yields were generally good, showing the results of the greater amount of cultivation work done during 1936.

The exported crop for the year amounted to 5,585 cwt. valued at £13,357 as compared with 6,553 cwt. valued at £9,627 in 1936. Canada, Trinidad and the United Kingdom together accounted for 96 per cent. of the exports as shown in the table below :—

Destination.	1936. cwt.	1936. £	1937. cwt.	1937. £
Canada	3,934	4,831	2,659	6,514
Trinidad	1,407	3,193	1,464	3,442
United Kingdom	981	1,360	1,246	2,961
Barbados	215	243	180	340
U.S. America	...	...	36	100
Total	6,538	9,627	5,585	13,357

The following table shows the amount and value of cacao exports for the past five years :—

	Cwt.	Value (£)
1933	6,056	6,778
1934	6,349	6,032
1935	5,605	6,042
1936	6,538	9,627
1937	5,585	13,357

V. THE BANANA INDUSTRY.

The banana industry continued to make steady progress, and estimates of production were substantially exceeded; regular fortnightly shipments were made by the steamers of the Canadian National Steamships, though a large number of stems, already purchased, was not shipped owing to lack of storage space on board.

Actual exports amounted to 110,966 stems, to which must be added those bought by the Canadian Banana Company and not shipped, giving a total export production of 126,940 stems valued at £11,814, as compared with 108,633 stems valued at £8,910 in the preceding year. The year 1937 therefore shows an increase of 16 per cent. in export production, and an increase of 32 per cent. in value, over 1936.

Weather conditions generally were favourable for the industry, though cultivations in the coast lands were somewhat affected by the deficient rainfall and produced smaller returns than usual; inland cultivations flourished, however, and the general quality of fruit produced was better than in 1936. Road transport conditions were rendered easier owing to the lower rainfall, the roads thus being able to stand up better under the heavy traffic.

The area under cultivation was estimated at 914 acres, an increase of some 14 acres over that of 1936; though there has not been any substantial increase in acreage, growers are becoming more and more familiar with the requirements of the crop, and are tending to the more intensive cultivation of better areas rather than extensive cultivation of poorer land. In this connection, the incidence of scarred fruit is considerably less, due to the fact that growers are at last beginning to appreciate the necessity for routine pruning and general field sanitation.

The main causes of rejection of fruit were staleness due to early cutting, and thin, badly shaped fruit from the drier coastal lands; in addition to personal visits to cultivations and demonstrations in pruning, etc., the Department issued a "plain language" circular—reproduced at the end of this Report—for the guidance of growers; this pamphlet was distributed throughout the Colony, and, from the interest it aroused, seems to have done its share in the drive for better fruit.

The question of erecting a jetty at Micoud for the sea transport of bananas and other produce, was fully investigated and provision was made in the Colony's Estimates for 1938 for this work: it is to be regretted that as yet final approval of this scheme has not been given; the Micoud District, apart from being the largest banana producing area in the Colony, will also have to be the outlet for the Murray Road Land Settlement Scheme, in view of the fact that the Murray Road cannot yet be finished through for motor traffic to the Soufrière end; sea transport, in addition to being cheaper, would relieve the roads of a considerable measure of heavy motor traffic, with possible savings in maintenance.

The renewal of the present contract with the Canadian Banana Company for a further five-year period, together with the increased price for nine and eight hand bunches paid as a bonus for the remainder of the present contract and forming part of the new contract, was agreed to in May, and has given considerable impetus to the industry. Production for 1938 has been estimated at 150,000 stems.

The industry continued to be adequately handled by the St. Lucia Banana Association, and the following tables, compiled from returns furnished by the Association and also by the Department are indicative of the position of the industry.

1. *Export Production during* 1937.

Month.	Stems.	Counts.	Count Percentage.
January	3,596	2,471	68·7
February	4,092	2,762	67·5
March	5,063	3,394	67
April	4,745	2,380	69·1
May	9,282	6,690	72
June	9,903	7,189	72·6
July	14,560	10,850	74·5
August	17,915	13,570	75·7
September	16,946	12,303	74·5
October	20,385	14,940	73
November	11,022	7,764	70·4
December	9,881	6,927	70·4
Total	126,940	91,240	71·8

2. *Estimated Number of trees and acreage of Bananas.*

District.	*No. of trees.*	*Acreage.*
Castries	20,000	70 acres
Dennery	60,000	210 ,,
Micoud	90,000	315 ,,
Vieux-Fort	4,000	13 ,,
Laborie	18,000	60 ,,
Choiseul	5,000	18 ,,
Soufrière	25,000	83 ,,
Canaries	22,000	73 ,,
Anse-la-Raye	16,000	54 ,,
Gros Islet	5,000	18 ,,
Total	265,000	914

3. *Export production* 1933—1937.

	Stems.	Value (£)
1933	22,258	1,626
1934	18,377	1,499
1935	60,439	5,209
1936	108,633	8,910
1937	126,940	11,814

2. (b) Minor Agricultural Industries.

I. THE FRESH FRUIT TRADE.

The production of fresh fruit for export was maintained during the year under review, and the value of exports under this head amounted to £4,424,

as compared with £4,133 in 1936, an increase of some seven per cent. The following schedule shows the position of this trade over the past five years:—

	1933.		1934.		1935.		1936.		1937.	
	Amount	Value £	Amount	Value £	Amount	Value £	Amount	Value £	Amount	Value £
Grapefruit crates	43	13	32	13	122	35	285	84	306	121
Oranges ,,	503	141	374	92	291	91	126	30	107	24
Mangoes ,,	7,490	1,212	7,881	1,372	6,556	1,567	8,046	1,619	9,591	2,032
Avocado pears ,,	3,144	610	2,245	389	3,857	709	3,336	504	3,960	623
Pineapples ,,	106	31	36	16	13	3	17	2	36	7
Miscellaneous ,,	...	2,003	...	1,917	...	1,752	6,758	1,894	...	1,617
Total ...	11,271	4,010	10,568	3,799	10,839	4,157	18,568	4,133	14,000	4,424

The values of exports to the main markets during 1937 were as follows:—

	Value (£)				
	Canada.	Bermuda.	U.K.	Other Places.	Total.
Grapefruit	50	22	40	9	121
Oranges	...	1	...	23	24
Mangoes	55	835	...	1,142	2,032
Avocado pears	1	621	...	1	623
Pineapples	...	6	...	1	7
Miscellaneous	...	...	...	...	1,617

Mention may also be made under this head of the trade in vegetables which was responsible for exports to the value of £642 during 1937, an increase of £61 over 1936. A feature of this trade is the comparatively large business done with Pumpkins, some 99 per cent. of which is with Bermuda, and the Department is considering steps to increase the production which it is understood, is not yet adequate to supply the demand of shippers.

The values of vegetable exports during 1936 and 1937 are shown below:—

	1936.	1937.
Pumpkins	396	430
Plantains	63	76
Mixed	123	137
Total	582	643

Further details of the Fruit trade, and of experimental work on first shipments, are included in the report on the work of the Government Marketing Depot appended to this Report.

II. FOREST PRODUCTS: FOREST CONSERVATION.

This industry declined somewhat in the production of the various classes of forest materials shipped during the year, and the total value of exported products amounted to only £3,093 as compared with £4,006 in 1936, a

decrease of some 30 per cent. The following table shows the exports under this head for the five-year period 1933—1937 :—

	Boards cub. ft.		Cedar cub. ft.		Firewood cub. ft.		Hardwood cub. ft		Logwood tons.		Furniture	Brooms doz		Charcoal bags.	
	Amt.	£	Amt	£	Amt.	£	Amt.	£	Amt.	£	£	Amt.	£	Amt.	£
1933	1,871	151	...	...	101,504	290	3,116	248	10	25	333	952	35	85,840	4,327
1934	2,008	158	103	8	79,104	196	4,008	242	67	98	147	1,052	35	89,840	4,327
1935	1,639	140	50	5	92,032	234	2,900	236	20	50	212	855	28	73,349	3,667
1936	2,317	223	10	1	90,368	228	2,414	135	42	70	58	939	26	67,594	3,265
1937	2,815	228	...	...	94,208	223	3,851	231	27	53	557	1,376	38	36,367	1,763
Average of 5 years.	2,130	180	48	5	91,453	234	3,257	218	33	59	261	1,035	32	70,598	3,501

A noticeable feature is the marked fall in charcoal exports during 1937 as compared with those of previous years : this is due to the lowered demand from Martinique, which, with Barbados, is the Colony's best customer for this product.

Forest Conservation.

Further steps were taken during the year to give effect to recommendations made by Mr. A. Wimbush in his Report on the Forestry Problems of the Windward and Leeward Islands : in addition to a revision of the Murray Road Land Settlement Scheme, and careful examination of the details of the revised scheme to ensure adequate provision for proper co-ordination with Forestry requirements, the problems of illegal timber cutting and "squatting" received attention.

COMPARATIVE SCHEDULE OF AGRICULTURAL PRODUCTS

		1933.			1934.		
		Quantities.	Value. £	£	Quantities.	Value. £	£
SUGAR PRODUCTS:							
Sugar, Vacuum Pan	tons ...	4,940	46,493		4,730	39,396	
Molasses & Syrup	galls. ...	43,260	1,417		23,080	1,431	
Rum	,, ...	...	...	47,910	...	...	40,827
LIME PRODUCTS:							
Concentrated Lime Juice	galls. ...	16,208	860		3,371	228	
Raw Lime Juice	,, ...	591	40		10,525	471	
Distilled Lime Oil	lb. ...	8,056	7,412		13,406	12,275	
Essential H.P. Otto of Limes	lb. ...	2,582	3,021		1,251	1,868	
Green Limes	brls. ...	3,758	4,445		6,001	7,010	
Pickled Limes	,, ...	...	...	15,778	...	...	21,852
COCONUT PRODUCTS:							
Coconuts	No. ...	1,199,808	3,527		2,616,175	7,298	
Copra	tons ...	542	5,167	8,694	302	2,592	9,890
CACAO PRODUCTS:							
Cacao	cwt. ...	6,056	6,778	6,778	6,349	6,032	6,032
BANANAS	bchs. ...	22,258	1,626	1,626	18,377	1,499	1,499
FOREST PRODUCTS:							
Boards (native)	c. ft. ...	1,871	151		2,008	158	
Cedar	,, ...	...	...		103	8	
Firewood	cords ...	793	290		618	196	
Logwood	tons ...	10	25		67	98	
Hardwood	c. ft. ...	3,116	248		4,008	242	
Brooms	doz. ...	952	35		1,052	35	
Charcoal	bags. ...	85,840	4,327		89,238	4,486	
Furniture (Household)	...	...	333		...	147	
Miscellaneous	...	...	...	5,409	...	...	5,370
FRESH FRUIT & PRODUCTS:							
Mangoes	crates ...	7,490	1,212		7,881	1,372	
Oranges	,, ...	503	141		374	92	
Grapefruit	,, ...	28	13		32	13	
Pineapples	,, ...	106	31		36	16	
Avocado Pears	,, ...	3,144	610		2,245	389	
Mixed Fruit	...	...	2,003		...	1,917	
Preserved Fruits	...	...	117		...	38	
Jams, Jellies, etc.	...	...	43		...	47	
Miscellaneous	...	...	...	4,170	...	3	3,887
SPICES:							
Nutmegs	lb. ...	6,834	80		8,272	102	
Mace	,, ...	1,326	58		1,062	51	
Kola Nuts	,, ...	13,760	108		15,688	121	
Miscellaneous	,, ...	2,347	22	268	35	2	276
LIVE STOCK & PRODUCTS:							
Hides & Skins	No. ...	2,240	122		1,391	97	
Shells & Turtles	lb. ...	105	22		...	141	
Fish Oil	galls. ...	...	...		...	...	
Horses	No. ...	63	288		85	369	
Asses	,, ...	5	11		22	6	
Mules	,, ...	23	126	569	22	134	747
HONEY PRODUCTS:							
Honey	lb. ...	34,826	373		43,051	424	
Beeswax	,, ...	206	5	378	168	10	434
BAY PRODUCTS:							
Bay Oil	galls. ...	20	32		2	8	
Bay Rum	,, ...	1,827	398		1,424	301	
Citrocol	,, ...	...	...	430	...	...	309
VEGETABLE PRODUCTS:							
Plantains	bchs. ...	341	22		208	14	
Farine	lb. ...	12,530	61		22,202	113	
Yams	,, ...	...	25		...	7	
Miscellaneous	...	...	214		...	105	
Pumpkins	,, ...	...	...	322	...	...	239
MISCELLANEOUS PRODUCTS:		...	275	275	...	317	317
Total Exports	...			92,607			91,679

AND BY-PRODUCTS EXPORTED FROM ST. LUCIA, 1933—1937.

1935.			1936.			1937.		
Quantities.	Value. £	£	Quantities.	Value. £	£	Quantities.	Value. £	£
6,080	48,377		7,707	60,358		7,225	62,313	
168,903	2,401		107,128	1,132		144,016	3,201	
...	...	50,778	...	...	61,490	2,427	243	65,757
1,080	45		3,317	160		1,109	60	
29,613	854		34,171	1,405		11,350	602	
10,264	9,673		5,463	6,091		11,305	10,187	
1,504	2,517		810	1,047		2,106	2,946	
6,619	8,035		5,731	6,977		3,537	4,420	
...	...	21,124	...	...	15,680	26	28	18,243
2,814,965	7,632		3,409,621	9,608		2,993,422	10,476	
215	1,871	9,503	306	3,561	13,169	404	5,335	15,811
627 809	6,042	6,042	6,538	9,627	9,627	5,585	13,357	13,357
60,439	5,209	5,209	108,633	8,910	8,910	126,940	11,814	11,814
1,639	3		2,317	223		2,815	228	
50	3		10	1		...	...	
719	284		706	228		94,208	223	
20	50		42	70		27	53	
27,168	182		2,414	135		3,851	231	
855	28		939	26		1,376	38	
73,349	3,667		67,594	3,265		36,367	1,763	
27	218		..	50		...	557	
.	.	4 385		81	4,079	...	...	3,093
6,556	1,567		8,046	1,619		9,591	2,032	
291	91		126	30		107	24	
122	35		285	84		306	121	
	3		17	2		36	7	
3,857	709		3,336	504		3,960	623	
5,496	1,699		6,749	1,891		...	1,617	
2,318	53		..	54		...	41	
...	...			51		..	56	
..	...	4,157	..	16	4,251	...	...	4,521
4,736	63		10,509	134		10,066	184	
1,032	44		1,913	72		1,892	99	
11,776	106		11,155	70		15,546	144	
	62	275	2,087	39	315	2,436	41	468
2,879	145		4,329	132		2,446	294	
357	67			134		464	115	
	...		7	2		...	...	
35	180		34	136		10	38	
...	...		3	9		...	...	
12	70	462	9	35	448	23	85	532
44,357	415		65,290	609		104,855	954	
	13	428	239	19	628	330	7	961
9	4			...		...	...	
1,168	243			227		906	177	
..		247	1 136	...	227	212	89	266
512	38		965	63		1,256	76	
13,128	66		17 039	103		13,262	108	
	4			6		...	1	
	14			565		...	136	
...	..	122	.	..	737	...	430	751
.	500	500	...	797	797	...	47	47
		103.232			120.358			137,238

III. LIVESTOCK AND FARM ANIMALS.

The importance of the livestock industry is not reflected in the volume of exports under this head, as only a few animals and small quantities of hides and skins are exported from the Colony each year. Internally, however, the industry is of considerable importance from the point of view of meat and milk production for local use, the manufacture of pen manure, and draught purposes.

During November the Colony was visited by Dr. H. V. M. Metivier, O.B.E., B.Sc., M.R.C.V.S., Government Veterinary Surgeon, Trinidad: visits to Union Station and various estates were made, and Dr. Metivier commented favourably on the general improvement shown in the livestock throughout the Colony; more attention is now being paid to the grading up of herds for milk and meat production, but as yet there is no organised large scale dairy business for supplying milk and butter to the public, even though the need for such an enterprise is universally recognised.

Increased use is being made of the facilities provided by the Government Stock Farm, and the purchase of a Sussex bull from England has marked another step forward in the drive for the improvement of livestock in the Colony. The values of exports under this head are given below, with 1936 figures inserted for comparison:—

	1936. £	1937. £
Hides and skins ...	130	294
Cattle	8	...
Total	138	294

Government Stock Farm, Union Station.

The Sussex bull calf arrived early in January after a stay of ten weeks at the Government Stock Farm, Trinidad, for immunisation against Piroplasmosis, and has turned out to be a fine specimen of the breed; on the recommendation of the visiting Veterinary Surgeon he was sent on tour for service in December at the age of 22 months.

The animals at the Station kept excellent health and condition during the year, and their services were fully utilised, as shown by the following returns:—

	Jack.	Purebred Holstein Bull.	¾ bred Holstein Zebu Bull	Sussex Bull.	Large Black Boar.	Berkshire Boar.
Station Services ...	15	11	9	...	6	1
No. of tours ...	4	2	1	1	...	...
Total time on tour (days) ...	138	79	209	19	...	...

Twenty-nine pigs (17 Large Black and 12 Berkshire) were bred and sold from the Station at 10*s.* each for breeding purposes; the demand for these animals is still much in excess of the supply. During the year an old Large Black boar was sold for slaughter; he weighed 465lb. when sold, the carcase yielding 340lb. of meat.

The number of sheep was increased by one ram purchased and 5 lambs born.

In order to accelerate the excellent work being done by the Jack donkey, it is proposed to purchase two of the best local jennies available for the breeding of an improved type of local donkey for service in the out districts of the Colony; one jenny—a half bred animal—has already been selected and bred to the Jack.

SECTION II. WORK IN THE DEPARTMENT OF AGRICULTURE.

1. Work in the Botanic Gardens.

In view of the anticipated transfer of the Botanic Gardens to the Castries Town Board for maintenance as a Public Park, very little beyond the usual routine work was done; small lengths, totalling 150 feet, of main drains were finished off in concrete, and some additional paths were metalled and rolled; cutlassing and mowing of lawns, trimming hedges, etc., were done as required, and the area was maintained in a clean and sanitary condition.

The dry weather conditions of the year were not acutely felt in this low lying spot, and no flooding occurred in the wetter months; the Meteorological Station has continued to function satisfactorily.

Plant and Seed Introduction. Supplies of plants and seeds are gratefully acknowledged from the following sources:—The Departments of Agriculture of British Guiana, Trinidad, Barbados, Bermuda and Dominica; the United States of America; the Imperial College of Tropical Agriculture. A full supply of vegetable seeds was maintained by the Department for local sale.

Fumigatorium Work. Consignments to the total of 62 passed through the fumigatorium or were otherwise treated, and 4 consignments consisting of plants in soil, seed cotton and diseased fruits were destroyed. The Department again calls for the fullest co-operation of the public in the enforcement of the Plant Quarantine Regulations which are set out in Section IV of this Report.

Plant Propagation. Propagation work with ornamentals and forest trees was continued during the year, and distribution amounted to 814 ornamentals and 47 forest trees: 886 ornamental plants were also transferred to the Union Agricultural Station, making a grand total of 1,680 ornamental plants during 1937.

2. Work at the Experiment Station, Union.

I. GENERAL OBSERVATIONS ON THE ECONOMIC CROPS.

Grapefruit.

Orchard Plots. The Marsh and Duncan varieties imported from Florida in 1928 made satisfactory growth, although somewhat retarded by the effects of *Diaprepes* attack and Gummosis. Fruiting was not as satisfactory as in 1936, and definitely inferior to the locally budded trees. No difference was noted in the time of bearing as compared with the locally grown trees: fruit began to mature in November, and all trees carried their fruit satisfactorily.

Selection Plots. These plots comprise a number of local selections of Marsh seedless trees; excellent growth has been made, and a good crop was set which began to mature in November. While there was much variation in the cropping habit of these selections, no definite relations to the different clonal types can as yet be observed. A wind break of *Adenanthera pavonina* is proving of considerable help in deflecting the wind currents from the hillside behind the section which have caused difficulty in shaping the citrus trees satisfactorily.

General. Irrigation has again been very beneficial in both the orchard and selection plots, as shown by the excellent condition of the trees throughout the year. A ground cover of *Indigofera endecaphylla* was maintained in both plots, the beds between the rows carrying an excellent cover of *Tephrosia candida*. A few of the intervening beds were continued as nursery beds for

the production of budded citrus plants for distribution. Stools of I.C.2., Giant Cavendish and Gros Michel bananas have grown well and borne good bunches. The drainage system has been entirely satisfactory.

Manures, etc. Two dressings of a complete citrus fertiliser were given during the year; the usual mulching with lemon grass, *Andropogon citratus*, was done during the dry season.

Oranges.

Orchard Plots. The trees have made good growth, aided by further cultivation work in this section; cropping was satisfactory, yields being considerably higher than in the previous year. Rust-mite was satisfactorily controlled.

Orchard Section. Growth has been generally good, all varieties responding equally well to the cultivation and redraining of this section: flowering was earlier than usual, and all trees set heavy crops of fruit; Rust-mite was again satisfactorily controlled, but birds caused some losses by attacking the still immature fruit and causing dropping.

General. A ground cover of *Indigofera endecaphylla* was maintained throughout the year, together with *Tephrosia candida* in the intervening beds. The application of two doses of a complete fertiliser and the usual lemon grass mulching were routine operations during the year.

Budded Limes.

Orchard Plots. As a result of the irrigation that it was found possible to give, the effects of the dry weather were somewhat minimised, and the trees kept in good condition, with less dieback than usually reported in this section. All trees cropped well including the hybrid T.1. which yielded heavily throughout the year.

Orchard Section. Both the Tahiti and Woglum varieties made increased growth and bore good crops, the latter variety showing up especially well.

Lemons.

Orchard Plots. Satisfactory growth was made, though cropping was rather poorer than usual; a few low budded trees were attacked by Gummosis and treated accordingly.

Avocados.

Orchard Section. Little or no progress was recorded with these trees, and cropping was very poor; two trees died during the year from root troubles due to the high water-table.

Coconuts.

Dwarf varieties. Excellent yields were obtained from these trees, and the nuts are in great demand for planting. Scale insects were unusually prevalent.

Local varieties. These have not made satisfactory progress, though several commenced bearing during the year: the site is not exactly suited to this crop, and it is planned to cut out the trees and use the land for other experimental work when the need arises. Johnson grass has been well nigh eradicated.

Sugar Cane variety Plot.

During the year the list of varieties grown at the Station was revised along lines recommended by the British West Indies Central Sugar Cane

Breeding Station, and the following were retained for observation and propagation as required :—

B.H. 10 (12)	S.C. 12/4
B. 2935	Co. 213
B. 3013	Co. 290
B. 3124	C.P. 807
B. 3125	D. 11/28
B. 3127	D. 66/30
B. 3138	D. 49/30
B. 3439	Diamond 10
Ba. 11569	

One new introduction, Diamond 10, was made through the Plant Quarantine Station, Trinidad. A total of 6,544 cane plants was distributed from this section during 1937.

Union Ornamental Section.

During the year work was started on the establishment of an ornamental section at Union in anticipation of the transfer of the Botanic Gardens to the Castries Town Board. This work has made satisfactory progress, and comprised the terracing of the knoll to the north of the main building, and clearing up of the old foundations on the knoll ; a rose garden has been laid out and a selection of imported varieties budded on local stocks has been established. Plans have been made for the erection of a suitable potting shed, and the removal of the meteorological instruments to a suitable site in this section : further progress will be recorded in the 1938 Report.

II. THE PLANT NURSERIES.

In addition to the nursery work done at the Botanic Gardens and Union Station, the Department maintained four other nurseries during the year for the supply of planting material throughout the Colony ; brief notes on these are appended :—

(a) Botanic Gardens :—reported under "Work in the Botanic Gardens."

(b) Union Station :—Budded limes, oranges and grapefruit were produced, together with mangoes, avocados and other miscellaneous crops. Good progress was made with this work and production was well maintained. Various experimental work with plant propagation was carried on.

(c) *Rabot Nursery, Soufrière.* The production of budded citrus plants, mainly limes, was the main work of this Station, but opportunity was also found for propagation work with other crops to supply the Soufrière district ; the nursery also serves as a demonstration plot, and every opportunity is taken to demonstrate such important matters as soil erosion control, composting, spraying, etc.

(d) *Citrus Nursery, Dennery.* This nursery together with that at Soufrière, produces the bulk of the budded lime plants for distribution in the Colony. Good work was done during the year, and an improvised irrigation system kept the nursery flourishing despite drought conditions : demonstrations in budding, training, planting, mulching etc., were also given.

(e) *Barre-de-L'Isle Nursery.* This nursery, originally laid out for the supply of disease-free banana plants, has continued to do good work, and opportunity has been found for other propagation and demonstration activities : demonstration plots of coffee, cacao, nutmeg, vanilla and other peasant crops, together with timber trees, have been established, and the contour draining and terracing of slopes is a feature of this nursery. Excellent results with Tonka beans (Dipteryx odorata) are being obtained, although the number of trees is as yet very small : experiments with marcotting and other means of propagation are being done ; two trees bore good crops at the age of two and a half years from seed.

(f) *Quilesse Nursery, Murray Road Land Settlement Scheme.* This nursery has been established on forest land for the supply of planting material to settlers under the Murray Road Land Settlement Scheme. Approximately 15 acres of bananas were maintained for plants, and coffee, citrus, minor peasant crops and timber trees were also grown and propagated; good crops of vegetables were also grown. The area serves also as a demonstration in contour draining, terracing, and the general treatment of hitherto forested land.

Distribution of planting material is done throughout the Colony by the Department's lorry or other convenient means; the total material distributed during the period 1933—1937 is shown below:—

	1933	1934	1935	1936	1937
Lime Seedlings	6,700	1,575	...	...	...
Budded & Grafted limes	3,382	8,202	6,454	8,648	5,288
Sour Orange Seedlings *	700	100	1,548	...	...
Budded Oranges	1,621	2,407	1,651	647	741
Budded Grapefruit	8,508	2,510	1,261	554	180
Budded Lemons	361	53	50	25	..
Grafted Mangoes	88	14	53	7	79
Grafted Avocados	40	...	39	16	108
Pineapple plants	942	...	...	62	...
Coffee, Robusta	4,690	4,374	4,540	16,493	17,758
Coconut plants	6	...	...	...	...
Dwarf Coconuts	76	42	112	117	208
Mango stocks	256	10	...	...	...
Guava	4	...	...	...	...
Tonka Beans	...	...	...	72	...
Sapodilla	2	...	...	...	...
Papaw plants	12	...	...	...	...
Total Orchard plants	27,388	24,443	15,792	26,641	24,362
Cane plants	13,324	22,308	11,545	800	6,544
Forest plants	108	161	306	120	47
Vegetable seedlings	4,615	2,725	...	...	...
Tanias	190	...	...	...	...
Dasheen	100	60	...	...	...
Sweet potato cuttings	14,202	35,200	...	...	...
Potato yams	4	5	...	...	...
Plantain suckers	95	...	18	...	...
Bananas	140	357	29,272	18,378	1,352
Total Economic Plants	60,166	85,249	56,933	45,939	32,305
Corn (lb.)	...	...	...	20	...
Green-dressing (lb.)	5	18	221	302½	149
Cover crop cuttings (bdls.)	...	...	...	6	...
Fodder plants & grasses	646	...	17	203	2
Pasture grasses	470	663	400	6	2
Lemon grass (stools)	600	300	101	660	...
Ornamental plants & cuttings	443	1,471	1,242	1,925	833
Hedge & fence sticks (bdls.)	3	6	...	12	...

* Mainly for nursery work.

The demand for Dwarf Coconuts for planting outside the Colony has continued, and several lots were disposed of mainly to Barbados: a few orders from overseas for orchard plants were also filled, but the majority had to be refused owing to the necessity for conserving all supplies for local needs.

III. GOVERNMENT STOCK FARM.

This work is referred to under Section I. 2 (b). "Livestock and Farm Animals".

3. Research and Experimental Work.

I. MANURIAL TRIALS IN BUDDED LIMES.

As mentioned in the Report for 1936, the manurial experiment on budded limes has been suspended owing to the need for providing the Citrus Pest Entomologist, Mr. R. G. Fennah, M.A., A.I.C.T.A., F.R.E.S., with a suitable area for his work on *Diaprepes*.

The trees have shown considerable improvement as compared with the previous year, and, though weather conditions in the early months of 1937 were definitely not favourable for the crop, a fair yield of limes was obtained, amounting to 97 barrels. Much work was done on pruning and generally improving conditions in the section. Expenditure for the year amounted to £34 0 9, inclusive of costs incurred on special work required by the Entomologist.

II. WITHERTIP DISEASE TRIALS OF BUDDED LIMES.

The area comprising this experiment was also taken over by the Entomologist, and consequently all treatments such as irrigation had to be given equally to all plots. Good growth was made, and, allowing for the unfavourable weather, a fair crop of 15 barrels was picked. Expenditure in this section amounted to £15 9 6.

II DEMONSTRATION ORCHARDS.

The purpose of these orchards is to demonstrate the development of one acre plots of different fruit trees, together with intercropping with local food-crops where practicable. The cost of all operations is recorded, and the value of all produce reaped is credited to each particular plot. Details are given below :—

EXPENDITURE AND RECEIPTS ON THE DEMONSTRATION PLOTS, 1931—1937.

PLOT I, ORANGES. (72 trees—25 feet x 25 feet).

Expenditure.				Receipts.			
1937	£	s.	d.		£	s.	d.
Cultivation	17	0	0	2,825 Oranges	7	0	0
Fertilisers and insecticides ...		18	0	32 bunches Bananas ...		10	8
	17	18	0		7	10	8
1936 Catch crops & Orchard trees ...	8	9	0		10	1	1
1935 ,, ,, ,, ...	10	6	0		2	19	7
1934 ,, ,, ,, ...	11	0	10		4	11	5
1933 ,, ,, ,, ...	14	8	8		14	1	0
1932 ,, ,, ,, ...	22	18	4		5	12	3
1931 ,, ,, ,, ...	12	3	10		1	17	1
Total Expenditure ...	97	4	8	Total Revenue	46	13	1
Per acre per annum ...	13	17	10				

PLOT II, GRAPEFRUIT. (72 trees—25 feet x 25 feet).

Expenditure.				Receipts.			
1937	£	s.	d.		£	s.	d.
Cultivation	16	4	10	9,092 Grapefruit	14	0	0
Fertilisers and insecticides ...	1	9	0	39 bunches Bananas ...		13	0
	17	13	10		14	13	0
1936 Catch crops & Orchard trees ...	8	2	0		11	13	6
1935 ,, ,, ,, ...	10	0	2		6	9	10
1934 ,, ,, ,, ...	11	6	3			19	10
1933 ,, ,, ,, ...	20	6	2		4	13	4
1932 ,, ,, ,, ...	18	11	7		14	9	8
1931 ,, ,, ,, ...	23	17	7		10	5	8
Total Expenditure ...	109	17	7	Total Revenue ...	63	4	10
Per acre per annum ...	15	13	11				

PLOT III, AVOCADO PEARS. (48 trees—30 feet x 30 feet).

Expenditure.				Receipts.			
1937	£	s.	d.		£	s.	d.
Cultivation	14	9	2	To value of intercrops ...	8	6	8
Fertilisers	1	10	0			...	
	15	19	2				
1936 Catch crops & Orchard trees ...	4	5	0			...	
1935 ,, ,, ,, ...	5	6	11			...	
1934 ,, ,, ,, ...	10	9	5		1	2	8
1933 ,, ,, ,, ...	17	5	8		2	13	0
1932 ,, ,, ,, ...	16	1	10		9	6	9
1931 ,, ,, ,, ...	14	13	9		3	10	0
Total Expenditure ...	84	1	9	Total Revenue ...	24	19	1
Per acre per annum ...	12	0	3				

PLOT IV, MANGOES. (48 trees—30 feet x 30 feet).

Expenditure.				Receipts.			
1937	£	s.	d.		£	s.	d.
Cultivation	6	13	6	2,455 Mangoes	7	9	0
Fertilisers		12	0			...	
	7	5	6				
1936 Catch crops & Orchard trees ...	3	18	6		1	9	9
1935 ,, ,, ,, ...	4	15	6		1	16	9
1934 ,, ,, ,, ...	5	15	3		1	0	6
1933 ,, ,, ,, ...	6	10	5		3	8	10
1932 ,, ,, ,, ...	13	11	6		9	0	0
1931 ,, ,, ,, ...	10	18	1		1	16	4
Total Expenditure ...	52	14	9	Total Revenue ...	26	1	2
Per acre per annum ...	7	10	0				

Plot I. Oranges.

Varieties. Washington Navel, Late Valencia, Parson Brown and Temple.

These trees all made good growth, aided by irrigation and additional cultivation work as a result of the necessary change in the drainage layout done during the year. A fair crop was set from the May—June flowering, the Parson Brown cropping well, closely followed by Temple; Late Valencia and Washington Navel were disappointing. The fruit was of good quality and found a ready sale locally.

In addition to the usual Rust-mite and Snow Scale which, however, were well controlled, birds did considerable damage to the nearly-ripe fruit, and poisoning was resorted to with successful results.

The rearrangement of the drainage system interfered somewhat with the permanent ground cover of *Indigofera*, and heavier mulching was done than usual. Fertilisers were applied as in 1936.

Plot II. Grapefruit.

Varieties. Marsh Seedless and Duncan.

A satisfactory crop was picked early in the year, and, after a short resting period, excellent growth was made, with a heavy flowering in May—June; setting was good, and the trees carried a fine crop of good quality fruit for picking in 1938.

No irrigation was possible in this plot, and heavy mulching was done in the dry months. A cover crop of *Indigofera* was maintained. Fertilisers were applied in two doses as in 1936.

Plot III. Avocados.

Varieties. Nimlioh, St. Anne, Fuerte, Government House seedling, Government Office seedling and Galvana Green.

Little or no growth was made in this plot; while there were no deaths from the usual root trouble (Annual Report for 1933), many of the trees died back considerably, and consideration is being given to the cutting down of the avocados and replacement with citrus.

Cropping was poor, and the storage trials planned for 1937 are still in abeyance.

Successful crops of Maize were grown as an intercrop, and it is planned to put the area under selected Papaw varieties as soon as seed is available. Manures were applied to the avocado trees as in 1936.

Plot IV. Mangoes.

Varieties. Grafted Julie, Budded Julie, Mon Repos late, Ressource late and Peach.

These trees have made good growth, and yielded well during the year. Manures were applied as in 1936. In this plot also the drainage layout was improved, and a ground cover of *Indigofera* established.

Extension Plot.

This plot continues to be used for new or useful economic trees which are being introduced for general planting purposes. The growth of all trees has been satisfactory and the complete list of trees is given below:—

Grapefruit:	Marsh Pink and Foster's Pink.
Tangerine:	Dancy and King.
Orange:	Lue Gim Gong, Hamlin.
Avocado:	Trapp, Simmons and Butler.
Miscellaneous:	*Malphighia glabra* (Barbados Cherry).
	Artocarpus integrifolia (Jack Fruit).

IV. SUGAR CANE MANURIAL EXPERIMENTS.

(i) Manurial Trials Reaped.

Estate Roseau.

Field: Jardin Negre.
Layout: Three 4 × 4 Latin Square.
Variety: B.H. 10 (12).
Plot size: Approximately 1/26th acre.
Planted: Mid-October, 1935.
Reaped: April 6—8, 1937.

Basal Treatments:

Ground Limestone—3 tons per acre.
Pen Manure—15 tons per acre.
Sulphate of Ammonia—1 cwt. per acre.

Experimental Treatments:

A. Nil.
B. 2 cwt. Sulphate of Potash per acre.
C. 1 cwt. Superphosphate per acre.
D. 2 cwt. Sulphate of potash
1 cwt. Superphosphate } per acre.

Dates of Application:

Basal treatments in Mid-November, 1935.
Potash and Superphosphate on November 22, 1935.

Results:

—	A.	B.	C.	D.	Mean.
Tons per acre ...	40·61	40·85	41·39	39·96	40·70
Per cent. of mean ...	99·77	100·36	101·69	98·18	100·00

Each yield in the above table is the mean of 12 plots. In order to be significant with a 20:1 probability, a difference between any two mean yields of 2·7 tons is required. The results of this experiment are therefore not significant.

(ii) Variety Trial, Vieux-Fort.

Field: Moulin (Pointe Sable Estate).
Plot size: Approximately 1/30th acre.
Layout: Four 3 × 3 Latin squares.
Planted: Oct. 16th, 1935.
Reaped: April 13th—14th, 1937.
Manurial Treatment: Approximately 10 tons of pen manure and 3 cwt. of Sulphate of Ammonia per acre.
Irrigation: In dry season 1936.
Varieties: (1) B. 2935.
(2) S.C. 12/4.
(3) B. 726.

Notes.—Germination. B. 2935 and S.C. 12/4 germinated well, with B. 726 showing the weaker germination usually experienced with this variety.

Germination counts were as follows:—

B. 2935 —98%
S.C. 12/4—78%
B. 726 —60%

Growth. Throughout the growing period B. 2935 maintained its vigour; S.C. 12/4 was next best, with B. 726 very "patchy" in the young stages. At the end of March, 1936 the following notes were recorded:

B. 2935 —Colour good, strong bunching with healthy shoots.

S.C. 12/4—Colour fair, but a fair percentage of poor stools with few tillers; inferior to B. 2935.

B. 726 —Still showing signs of poor start: very yellow colour, many stools with very few tillers: definitely inferior to S.C. 12/4.

Condition at reaping. B. 2935—satisfactory number of good canes per stool; still vigorous.

S.C. 12/4—inclined to dying out, some canes completely dry. Not so many canes per stool as B. 2935.

B. 726—still vigorous, compares well in appearance with B. 2935; superior to S.C. 12/4 as regards tendency to drying out.

Results:

—	B. 2935.	S.C. 12/4.	B. 726.	Mean.
Tons per acre ...	37·26	31·55	30·20	33·00
Per cent. of mean ...	112·90	95·61	94·54	100·00

Conclusions. The yields of each variety in the above table are the means of twelve plots. A difference between any two means yields of 2·43 tons per acre may be regarded as significant with a 20·1 probability.

These results are therefore significant in that the yield of B. 2935 is significantly greater than that of S.C. 12/4 or B. 726: there is no significance between the yields of S.C. 12/4 and B. 726.

V. ENTOMOLOGICAL INVESTIGATIONS.

(a) Sugar-cane Moth-borer (Diatraea spp.)

The Amazon Fly (*Metagonistylum minense*) appears to be maintaining itself satisfactorily in the Colony, and to be exercising a considerable measure of control over the borer; recoveries of puparia were made during the year, and the ease with which the adult fly can be seen in the fields augurs well for its satisfactory establishment. Counts were made at two factories during the 1937 crop, the figure revealing a satisfactory reduction in cane infestation by moth borers; a further visit from the Entomologist, Mr. H. E. Box, F.R.E.S., is envisaged for 1938.

(b) Citrus Weevil (Diaprepes spp.)

The following note has been kindly supplied by the Citrus Pests Entomologist, Mr. R. G. Fennah, M.A., A.I.C.T.A., F.R.E.S.:—

At the beginning of the year the results of the preliminary field trials laid down at the Union Experimental Station in 1936 became available. It was found that of a variety of soil fumigants, soil poisons, and protective surface layers, the following were effective to a significant degree. (1) an application of lead arsenate to the soil surface below the canopy (2) protective layers of (a) bagasse and molasses and (b) bagasse and asphaltic oil applied below the canopy of the tree. On account of its comparatively rapid disintegration, treatment 2 (a) is not being examined further for the present.

Early in March a large field experiment, including 148 trees, was laid down at Union. The protective treatments under test include (A) an application of acid lead arsenate annually for three years at the rate of 40 ozs. of a 1·4 mixture with sand to a circle of four feet radius around the trunk, and (B) a layer of asphaltic oil and bagasse, applied below the tree in a similar manner, and kept in a state of repair by patching when necessary. Results will be deduced from differences in quantity of fruit picked per annum after the crop of 1937.

On April 1st the Citrus Pest Investigation Scheme for the Windward and Leeward Islands came into operation, though under the terms of arrangement the Entomologist was unable to leave Trinidad until the close of the academic year at the Imperial College of Tropical Agriculture.

Between July and September a survey of the prevalence of weevils, based on a method of sampling the eggs present on the leaves of a fixed number of trees was carried out covering the citrus-growing areas. The details are given in a Memoir of the Citrus Pest Investigation published in Trinidad.* Attention was also given to some of the factors most likely to affect the abundance of weevils such as the presence of alternative hosts such as *Gliricidia*, the degree of parasitism during the egg-laying season, and the mortality of eggs and of young larvae.

Infestation. In brief summary, it is very probable that a general correlation exists between the abundance of *Gliricidia* in lime fields and degree of infestation by Citrus Weevils. The connection is possibly not more than periodical, as in some years (as in 1937) ovipositing weevils appear to ignore *Gliricidia*, while in other years they use it freely. Age of trees is unimportant in relation to liability to attack, though they are often more lightly attacked, probably on account of their foliar characteristics, since the majority of old trees in the Island are somewhat straggly, bear relatively little foliage, and produce only a few fresh shoots at each year. Flooding or irrigation seem to have no influence on the underground stages of the weevil; this aspect of the subject, however, is being given further attention.

Parasitism. Two parasites of the eggs of *Diaprepes* occur in the Island, being undescribed species of *Tetrastichus* and *Ufens*. The latter, on existing records, is limited in distribution to the Soufrière region and certain areas in the South. The progress of parasite incidence reveals that both parasites do not become noticeable for some weeks after the beginning of the main oviposition period, and are still increasing at the time when it ends. There is no doubt that under the conditions which have prevailed during the last two years, these egg-parasites cannot assert effective control, and their inability to do so is due in large part, if not entirely, to the great depletion of the parasite population in the seven or eight months between oviposition periods of *Diaprepes*.† Of the eggs laid by the weevil in 1937, 4·8 per cent. failed from various causes other than parasitism to develop.

During the Entomologist's stay a further protective measure designed to mitigate the severity of larval attack at the roots was laid down in an experiment.

In the course of numerous excavations data were obtained which convincingly demonstrated that in practically every example of striking above-ground symptoms of unthriftiness, the basal portions of the crown roots, and the crown itself, were multilated. Accordingly a system of baring the roots was adapted, in which soil is removed by hand, from the roots, (with the aid

* Citrus Pest Investigation. Oviposition and Parasitism of *Diaprepes* in St. Lucia in 1937, including Notes on the Citrus-Growing Areas and on Recent Experimental Work. Imperial College of Tropical Agriculture, Trinidad, November 1937, price 2*s*. net.

† It is anticipated that any progress made in this direction will come only when the bionomics of *Diaprepes* in other islands have been investigated, and a more adequate knowledge of parasites available has been secured.

of short pointed wooden sticks) to a depth of some nine inches below the crown, sloping upwards to soil level two feet from the trunk (on trees over five years old). On smaller trees a proportionate decrease in the size of the 'basin' is satisfactory. It is usually necessary to cut a small channel to drain off water. This measure is very cheap, and once it has been carried out no further larval damage can be inflicted on the upper roots, and as any larval damage will be dispersed over the more numerous and more rapidly replaced "feeding" roots, it is anticipated that the result of attack will be less severe. Additional advantages gained by this treatment are that the upper root system is kept dry and clean, while dying roots may be observed before necrosis reaches the collar. While no time limit has yet been determined for the durability of these 'basins' it may be stated that those made in the stiff soil at Union Experimental Station in August have required no further attention.

As a result of experiments carried out towards the close of the year in Trinidad, and later in Dominica, it was found that the cover crop *Tephrosia candida* is avoided by Citrus Weevils. Adult weevils, when confined with foliage in repeated experiments in the laboratory either did not feed until they died, or died shortly after eating the foliage. Similarly young larvae did not feed on germinating seeds of *Tephrosia* thickly scattered through the soil in which they had been placed. From preliminary observations made in Dominica, it seems that the repelling effect of *Tephrosia* in the field is by no means negligible, and that its presence, *in large quantities*, thickly planted, may cause at least in part a migration of adults out of a field. This possibility, together with its general superiority in habit and freedom from pests over most of the usual cover crops, recommend it for adoption on citrus-growing estates.

(c) Coconut Pests.

Apart from the small outbreak of *Polyderces* already mentioned in the section dealing with the coconut industry, and a rather high infestation of scale insects in areas more affected by the dry conditions, there has been nothing of note from the entomological standpoint. Rat damage has as usual, been fairly prevalent despite the measures usually taken against this pest.

(d) Banana Pests.

During 1936 it was noticed that bananas from certain areas were very much disfigured by small black spots, resulting in an excessively high percentage of rejects from those areas; this problem was solved early in 1937 by the discovery in St. Vincent that similar spotting in that island was caused by a thrips (*Frankliniella insularis*), the spots being old egg pits from eggs laid on the very young fruit: remedial measures as suggested by the Department of Agriculture, St. Vincent, were adopted in the affected areas, and comprised the cutlassing of all flowering bush in the fields, especially leguminous plants: very little spotting is now noticed.

VI. PLANT PATHOLOGY. FUNGOUS DISEASES.

(a) *Panama Disease of Bananas.*

Inspection of the Banana plantations and work on Panama disease was continued throughout the year, the total number of plants examined being 319,633 in both old and new gardens; of these a total of 7,894 stools was found infected, giving a percentage infection of 2·47%; all cases of disease were treated with gas-oil.

While the 1937 infection figures are considerably higher than in 1936 (0·89 per cent.), it must be emphasised that many areas, hitherto regarded as abandoned and therefore not examined, have been brought under survey. The co-operation of the planting community is again gratefully acknowledged, and the Panama Disease inspection staff has been materially assisted in its work; no enforcement of measures under the Plants Protection Ordinance was necessary.

A detailed analysis of the year's working is given below :—

THE DISTRIBUTION OF PANAMA DISEASE IN THE COLONY—SURVEY 1937.

New Cultivations (up to 3 years.)

	No. of Gardens.				No. of Stools.			
	Inspected.	Diseased.	Per cent.		Inspected approx.	Diseased.	Per cent.	
			(1936)	*1937*			*(1936)*	*1937*
Castries ...	190	54	(40·7)	28·4	36,119	891	(0·8)	2·4
Dennery ...	251	76	(27·3)	30·2	36,760	1,060	(0·6)	2·8
Micoud ...	409	62	(19·3)	15·1	52,500	1,321	(0·3)	2·5
Soufrière ...	860	190	(19·5)	22·1	90,842	363	(0·6)	0·4
Canaries ...	38	22	(59·1)	57·8	5,560	100	(1·3)	7·3
Anse-la-Raye ...	82	32	(48·6)	39·0	13,200	582	(1·4)	4·5
Gros Islet ...	18	11	(42·3)	61·1	2,460	369	(1·4)	15·0
	1,848	447	(25·0)	24·2	237,441	4,986	(0·62)	2·09

Old Cultivations (over 3 years.)

	No. of Gardens.				No. of Stools.			
	Inspected.	Diseased.	Per cent.		Inspected approx.	Diseased.	Per cent.	
			(1936)	*1937*			*(1936)*	*1937*
Castries ...	54	32	(50·0)	59·4	6,560	375	(1·7)	5·7
Dennery ...	151	52	(27·4)	34·4	35,640	420	(0·4)	1·1
Micoud ...	121	56	(40·6)	46·3	10,680	494	(0·9)	4·6
Soufrière ...	498	225	(41·6)	45·1	19,110	841	(4·0)	4·4
Canaries ...	41	37	(61·2)	92·2	3,980	597	(5·8)	15·0
Anse-la-Raye ...	33	24	(50·0)	72·7	4,142	397	(1·2)	9·5
Gros Islet ...	12	8	(35·7)	66·6	2,080	106	(0·9)	5·0
	910	434	(40·9)	47·7	82,192	3,230	(1·88)	3·93

4. AGRICULTURAL EDUCATION.

(a) PEASANT ADVISORY SERVICES.

In addition to the usual estate visits the travelling officers continued to devote a large proportion of their time to peasant advisory work, and frequent visits to small-holdings provided opportunities for lectures and demonstrations on all aspects of peasant agriculture : the issue of free planting material in approved cases was continued, and every effort was made, despite a reduced staff, to keep in close touch with all classes of agriculturists in the Colony.

(b) AGRICULTURAL INSTRUCTION IN THE PRIMARY SCHOOLS.

The twenty-ninth annual examination of the Primary Schools in Agriculture was conducted jointly by the Agricultural Officers—Mr. G. M. Glasgow, Agricultural Officer Class I, and Mr. D. A. Alexander, Agricultural Officer Class II in their respective districts during November and December.

Schools were also visited as often as possible during the year by the travelling officers, and lectures and demonstrations given in the school gardens.

The examiners' report is given below, and shows that a total of 812 pupils, including 94 girls, were taught during the year, of which 73·8 per cent. presented themselves for examination, giving an absentee list of 212 or 26·2 per cent. (1936—24·1 per cent.). Some schools had an excessively high proportion of pupils missing from the examination classes.

The general results are again not up to the average though comparing well with the results for 1936. Again must be stressed the importance of agricultural teaching, and urge the teachers themselves to take a keener interest in the subject: the time that can be spared by the Agricultural Officers for this work is limited especially when the Department has had to work with a depleted staff as in 1937; the essential teaching must therefore be done by the teaching staff of the school, and the staff must be given the opportunity of learning and acquiring that enthusiasm which is so necessary if the knowledge is to be successfully passed on to the pupil; such enthusiasm is, in most cases, sadly lacking at the present time.

Once again are comments by the examiners on the lack of observation shown by the pupils: difficult questions from the textbook are usually answered well, but in textbook phraseology, showing that little attempt is made to explain textbook words in a simple and intelligible manner: easy questions, on the other hand, requiring a small measure of observation of routine everyday occurrences are seldom satisfactorily answered. It would be an easy matter to arrange visits to estates or country nurseries, and every facility would be given by estate authorities and the officers of the Department if a keener desire to learn—and to teach—were shown; it is pleasing to record that the Castries Methodist Garden Class again availed itself of the opportunity for an afternoon's visit to the Union Station, and every effort was made to render the trip instructive and interesting.

The annual examination of Teachers in Agriculture was postponed until 1938.

EXAMINERS' REPORT ON THE PRIMARY SCHOOLS.

Micoud R.C.

Report: Theory: Fair. Practice: Good.

Comments. The practical work in the garden is still hampered by the depredations of land crabs and poor conditions generally. Crops of cabbages, yams, tomatoes, bananas, etc., were grown, and a bed of Sour Orange stock planted for budding. The large percentage of absentees may have been responsible for the low standard of theoretical knowledge.

Vieux-Fort R.C. Boys'

Report: Theory: Very Good. Practice: Very Good.

Comments. The garden shows the result of careful handling. A plot of Sea Island Cotton (local seed) 60′ × 23′ was planted and is growing well, crops of yams, cabbages, tomatoes and eschalots were successiully grown. A healthy interest was taken in topworking mangoes and 21 were successfully done, many on outside holdings. Sour Orange stock were also grown for budding. A plant from a fig tree was propagated by circumposition

Forestiere Methodist.

Report: Theory: Very Good. Practice: Very Good.

Comments. Keen interest is taken in Agriculture in this school. Both theoretical and practical work were very good. The garden is well worked and a variety of useful crops is grown. Contour drainage is, however, a necessity in this wet district.

Laborie R.C.

Report: Theory: Very Good. Practice: Very Good.

Comments. A pleasing increase of interest in practical work was noticed. Topworking and cleft grafting of mangoes were performed and oranges budded on Sour Orange stock. Tomatoes, beans, cabbages, etc., were grown and the garden kept in a satisfactory condition. Theoretical knowledge was very good

Castries Anglican.

Report: Theory: Good. Practice: Very Good.

Comments. The beds were cropped with truck vegetables, corn, yam and potato. The bananas were a noticeable feature. The girls have a section where roses and other ornamentals are grown. Green dressing should be practised in rotation, and more budding and grafting should be undertaken.

Babonneau R.C.

Report: Theory: Good. Practice: Good.

Comments. Effort is being made to improve the condition of the garden by mulching and drainage; the present plot should, however, be given over to the orchard trees which are already meeting each other, and the site selected by the examiner worked for truck crops which were conspicuously absent. This school did good work in budding and grafting some time ago and this should be continued.

Castries Methodist

Report: Theory: Good. Practice: Very Good.

Comments. Again the need for a better site for the school garden must be stressed. The plot is too small, over-crowded and low-lying. Draining is almost impossible. Cotton, bananas, yams and truck vegetables were grown.

Mon Repos R.C.

Report: Theory: Very Good. Practice: Good.

Comments. This garden has been well worked and produced such crops as tomato, beet, lettuce, onion, beans, pineapple, eddoes, okra and bananas. I suggest that a small ornamental section should be worked by the girls and an orchard section worked apart from truck garden portion. Heavy mulching and green dressing should be done.

Soufriere R.C. Boys'.

Report: Theory: Very Good. Practice: Good.

Comments. A new and larger garden site has been obtained and work will commence on it next year. Crops of cotton, tomatoes, carrots, pepper and bananas were grown. Budding and grafting were done, and the garden kept in good condition generally. There is still room for improvement in the matter of observation and knowledge of major crops for which these boys have unrivalled opportunities.

Anse-la-Raye R.C.

Report: Theory: Very Good. Practice: Good.

Comments. The only thing about this garden is its nearness to the school house. It is subject to flooding and is overrun with crabs. Every effort should be made to raise the level of the land. Vegetables and pulse crops were raised and partly distributed among the pupils. Of 45 orange plants budded 39 were successful, these were also given to the pupils; this is a commendable step. The pupils are keen.

Castries R.C. Boys'

Report: Theory: Very Good. Practice: Good.

Comments. Truck vegetables and ground provisions including plantains and bananas were grown. The boys should be able to show work done by themselves. I understand that some parents—very shortsightedly—object to their boys taking part in the Agricultural practices. The beds need a good turning over during the dry season and all available oven ash and pen manure should be worked in to loosen up the soil.

Dennery R.C. Boys'

Report: Theory: Very Good. Practice: Good.

Comments. This garden is being consistently worked. Crops grown consisted of cabbage, carrot, tomato, peas, beans, melon, and cucumbers. The orchard section is planted in grapefruit, oranges, coconut, grapevine and mango. Forty budded citrus plants were distributed to students.

Saltibus R.C.

Report: Theory: Good. Practice: Good.

Comments. Though the garden was in good condition, it is regretted that last year's recommendations were not carried out properly and there is much room for improvement. Beans, turnips, chive, bananas and coffee were grown satisfactorily during the year. The practical knowledge of major crops was good. All methods of increasing the humus content of the soil should be practised without delay.

La Ressource R.C.

Report: Theory: Good. Practice: Very Good.

Comments. Crops of lettuce, cabbage, okra, yam, banana, cotton, tomato, peas and beans were grown. Budding grafting, draining, mulching, green dressing and preparing seed boxes received due attention. The orchard, consisting of mango, grapefruit, orange, lime and avocado, was in fair condition. The drains should, however, be dug contour-wise, the garden being on a slope.

Choiseul R.C. Boys'.

Report: Theory: Very Good. Practice: Good.

Comments. The garden was in good condition, but beds now need remaking. A thorough tilling of the whole garden is necessary and drains need to be reconstructed and deepened. Crops of beans, tomatoes, cabbage, &c., were grown during the year. Permanent mango plants are in good condition.

Riviere Doree Anglican.

Report: Theory: Good. Practice: Good.

Comments. Damage done by sheep has caused the practical work to lose much of its value, but crops of yams, okras, pigeon peas, and egg plants were grown with a varying amount of success. A cane plot was planted for demonstration purposes and did well. Budding of citrus and approach grafting of mangoes were attempted.

Canaries R.C.

Report: Theory: Fair. Practice: Poor.

Comments. Unsettled conditions recently prevailing in this school may be responsible for the very low standard of theoretical knowledge. No work was done in the garden during the year, beyond fencing to keep out fowls and planting of a few coffee trees—which in absence of any shade—have since died and cabbage and carrots which did not germinate. It is to be hoped that a good effort will be made in the near future.

List of Marks and Standing of Schools in Agricultural Teaching.

Schools.	No. absent on Examination Day.	No. of Pupils Examined.	Condition and use made of Garden.	Practical work and Knowledge.	Theoretical Knowledge.	Total.	Percentage.	Remarks.
Possible Marks	—	—	10	10	10	—	—	—
Forestière Methodist	2	8(d)	9	8	9	26	86·6	E.
Vieux-Fort R.C. Boys'	9	17	8	9	9	26	86·6	E.
Laborie R.C. Boys' ...	5	33	7	8	9	24	80	V.G.
Soufrière R.C. Boys'	16	78	7	6	9	23	76·6	V.G.
Mon Repos R.C.	7	39(a)	8	7	8	23	76·6	V.G.
Choiseul R.C. Boys'	7	26	6	7	9	22	73·3	V.G.
Ressource R.C.	5	30(b)	7	7	8	22	73·3	V.G.
Castries Methodist	12	30	7	7	8	22	73·3	V.G.
Saltibus R.C.	17	22	6	7	8	21	70	V.G.
Rivière Doree Anglican ...	4	29	7	7	7	21	70	V.G.
Castries R.C. Boys'	44	107	7	6	8	21	70	V.G.
Dennery R.C. Boys'	5	31	8	6	7	21	70	V.G.
Anse-la-Raye R.C.	10	25(e)	7	6	8	21	70	V.G.
Castries Anglican	20	71(c)	7	5	8	20	66·6	G.
Babonneau R.C.	9	16(f)	6	6	7	19	63·3	G.
Micoud R.C.	16	18	7	7	5	19	63·3	G.
Canaries R.C.	24	20	4	5	6	15	50·0	F.
	212	600	7·5	6·7	7·8	21·5	71·6	

(a) Includes 21 girls; (b) 15 girls; (c) 35 girls; (d) 1 girl; (e) 9 girls; (f) 13 girls.

(c) AGRICULTURAL CADETS.

Six cadets were in residence at the Agricultural Station Union during the year, three new selections having been made to replace those that left on the completion of their course at the end of 1936.

The curriculum followed the lines of previous years, though an effort was made to lessen the number of lecture hours and devote the time to more practical work under an Agricultural Officer or, in his absence, the Foreman of the Station.

The Cadets were examined twice during the year, the usual mid-year tests being given in order to ascertain progress; at the end of the year the final examination was conducted by the Acting Agricultural Superintendent, the general results being as follows:—

	Practice	*Theory*	*General*	*Per cent.*
SECOND-YEAR CADETS.				
A. Octave ...	31	25	12	68
W. Valmont ...	29	22	15	66
G. Annuncio ...	25	19	12	56
FIRST-YEAR CADETS.				
H. François ...	29	21	12	62
S. duBoulay ...	25	16	13	54
Andrew Joseph ...	22	17	10	49

Comments: Practice—Generally fair.
Theory—Fair, though there is too much of a tendency to learn direct from the book.
General—Conduct satisfactory.

5. Publications, Correspondence, and Organisations.

One pamphlet on bananas—reproduced in the back of this Report—was issued during the year for local distribution; Memoranda on the Fruit and Vegetable industry were prepared for the Conference of the West Indian Fruit and Vegetable Councils held in Trinidad in 1938; in addition, Memoranda were prepared for the St. Lucia Banana Association, and an account of the Syrup industry of the Colony was compiled for the meeting of Exporters of Fancy Molasses held in Barbados. The issue of monthly "Agricultural Notes" was continued until pressure of work and shortage of staff made their compilation impossible. The usual monthly returns were submitted to the Advisory Department of the Imperial College of Tropical Agriculture in Trinidad.

No new books were added to the Reference Library other than sundry reprints and replacements. As usual, a large number of bulletins and reports were received and are gratefully acknowledged.

Annual returns and revisions were provided as usual. 174 Minute Papers and 702 letters were dealt with during the year.

The following organisations held meetings, attended by officers of the Department during 1937:—

The St. Lucia Banana Association and Board of Control; the St. Lucia Lime Producers Coy. and Citrus Growers; the St. Lucia Agricultural and Commercial Society; and the Board of Agriculture.

The Colony was also represented at the Conference of the British West Indies Fruit and Vegetable Council (Eastern Group) held in Trinidad in February—March*, the Assistant Agricultural Superintendent and Mr. André duBoulay being the official delegates.

* Report of the Second Meeting of the British West Indies Fruit and Vegetable Council (Eastern Group), February—March, 1937. Trinidad.

STAFF CHANGES.

Mr. E. A. Walters F.R.H.S., F.R.M.S., Agricultural Superintendent, sailed on vacation leave on March 4th, and, at the termination of his leave in September was transferred to the Department of Agriculture, Gold Coast. It is not possible to assess here the great value of the work done by Mr. Walters during his period of service as Agricultural Superintendent—a period of some fifteen years; it suffices to place on record the thanks and keen appreciation of the whole community for the useful services rendered by Mr. Walters to agriculture in the Colony.

Mr. G. B. Gregory, Dip. Agric. (I.C.T.A.), Assistant Agricultural Superintendent acted Agricultural Superintendent from 5th March to the end of the year. He was on sick leave from October 13th to October 21st inclusive.

Mr. G. M. Glasgow, Agricultural Officer, Class I, acted Assistant Agricultural Superintendent from 4th March to the end of the year. Mr. D. A. Alexander, Agricultural Officer, Class II, acted Agricultural Officer, Class I, during the same period.

Miss S. Cox, Assistant Clerk, was on leave from 1st September to the end of the year.

Mr. R. C. Phillip, Under Clerk, acted Assistant Clerk from 1st September in place of Miss S. Cox, on leave.

Mr. C. R. Bascom, Copyist, transferred to Attorney General's Department from 30th March.

Mr. G. J. Belizaire, Copyist, was promoted to the Treasury Department from 1st July.

Mr. J. E. D. Osbourne was appointed Temporary Copyist from 25th March to 31st August and from 1st November to 31st December. For the period 1st September to 31st October he was Temporary Copyist Government Marketing Depot.

Mr. E. G. Eudoxie was appointed Temporary Copyist from 23rd August.

Mr. I. B. Sutherland was appointed Copyist from 1st July: transferred to Education Department 1st August.

OFFICIAL VISITORS.

His Excellency Sir Selwyn Grier; His Excellency H. B. Popham; His Honour E. W. Baynes, Administrator; His Honour G. H. Frith, Acting Administrator; Sir G. Evans, M.A., C.I.E., Principal of the I.C.T.A.; Mr. G. A. Jones, Dip. Agric., Commissioner of Agriculture; Mr. C. C. Skeete, B.A., Assistant Commissioner of Agriculture; Capt. H. V. M. Metivier, O.B.E., B.Sc., M.R.C.V.S., Senior Veterinary Officer, Trinidad; Mr. R. G. Fennah, M.A., A.I.C.T.A., F.R.E.S., Entomologist for Citrus Pests Investigation; Mr. A. E. S. McIntosh, B.Sc., Ph.D., Geneticist, Department of Science and Agriculture, Barbados; Mr. S. A. Hammond, Education Commissioner, Trinidad; Mr. H. B. Pidduck, Department of Agriculture, Dominica; Mr. C. A. Gomez, Peasant Development Officer, Antigua.

SECTION III. FINANCIAL STATEMENT.

Expenditure.

	£	s	d.
Head XVII. Agriculture.			
Personal Emoluments	1,467	5	2
Travelling Allowances	303	5	10
Labour, Union and Castries Stations	391	8	11
Seeds, Plants and Manures	183	11	9
Transport and Animals	87	13	5
Miscellaneous Requisites	17	12	9
Banana Nurseries	98	19	6
Printing, including Publicity work and purchase of Books ...	6	11	4
Minor Repairs	15	8	7
Freight and Transport of Plants	22	3	0
Contingencies	11	15	8
Panama Disease Control	183	12	5
Demonstration Fruit and Vegetable Plot	46	19	1
Experimental Lime Plot	72	18	6
Agricultural Cadets in Training, Union Station	156	3	4
Visit of Veterinary Surgeon	30	0	0
Delegates to Fruit and Vegetable Conference	33	6	5
Agricultural Society, Grant-in-Aid	20	0	0
Fruit and Vegetable Depot	170	11	1
Cold Storage Plant	645	17	2
Citrus Cultivation	198	10	0
	£4,163	13	11
Head XXII. Colonial Development Schemes.			
Scheme No. 396 Land Settlement	£589	17	7

Revenue.

			£	s.	d.
Head IV.	16.	Sales from Agricultural Stations	150	6	5
	17.	Sales from Banana Nurseries	59	15	10
	18.	Cold Storage Plant	458	1	11
	19.	Government Marketing Depot	54	0	10
	20.	Sale of Citrus Plants	48	15	4
	22.	Fees for Fruit Inspection	65	7	1
Head X.	1.	Instalments, Sales of Lots	5	12	0
			£841	18	5

In addition the Deposit Account, Land Settlement, yielded a credit of £63 7 7, from sales of bananas, etc., making a total of £76 5 3 on deposit at the end of the year.

Revenue derivable from the cess on bananas was £349 9 8. The cess on Citrus Products—contribution to the Citrus Pests Investigation—yielded £13 2 6.

Work under Colonial Development Fund Grants—Agricultural Department.

1. The Murray Road and Land Settlement Schemes, involving the grant of £9,219 together with the loan of £9,219 at 3½ per cent. per annum for 15 years, commencing from the sixth year, received final approval during the year, and work on road construction was started.

2. A grant to provide for the services of a Citrus Pests Entomologist for three years was also approved and an officer appointed. The St. Lucia Citrus Growers are contributing the sum of £750 in three years towards the cost of this service.

SECTION IV. SUMMARY OF LEGISLATION AFFECTING AGRICULTURAL INDUSTRIES AS AT 31ST DECEMBER, 1937.

PLANT QUARANTINE.

I. EXTERNAL—IMPORT PROHIBITIONS.

The introduction of all plant material is regulated under the Plants Protection Ordinance No. 14 of 1916 (Revised), and cognate subordinate legislation. This quarantine work involves the inspection of all seeds, plants, and miscellaneous planting material and containers introduced into the Colony during the year, and is carried on in conjunction with the Post Office and Customs authorities. The introduction of soil, fruit and vegetables is further regulated by legislation under the Customs Amendment Ordinance No. 2 of 1920.

The following schedule gives the position of legislation regulating the importation of material likely to be a means of introducing diseases or pests.

A. *Prohibited articles, including seeds, plants, soil and packages and articles connected therewith.*

Articles Prohibited.	Country of Origin.	Reasons of Prohibition.	Index of Legislation.
1. Plants and Seeds.	Ceylon.	General precautions.	Revised Rules, Chapter 7, Regulation 2.
2. Cacao plants or any parts thereof.	South America, South and East of Panama.	Witchbroom disease.	Revised Rules, Chapter 7, Regulation 2.
3. Banana plants or any parts thereof.	Trinidad, Tobago, Central and South America, Jamaica, Grenada, Canary Islands & West Africa.	Panama disease, root disease and insect pests.	Revised Rules, Chapter 7, Regulation 2. Proclamation of 8.9.17. Proclamation No. 6 of 1925. Proclamation No. 13 of 1925.
4. Coffee, guava, mango, sapodilla, star-apple, plants, fruits, etc.	Bahamas, Ceylon, Cuba, Jamaica, India, Philippines.	Citrus Black Fly.	Proclamation of 10.2.17.
5. All soil, fruit and vegetables, except plantains, nuts, onions, Irish potatoes, canned, candied, dried, or processed fruit and vegetables.	Countries other than the British Isles, Canada and British West Indies.*	Mediterranean Fruit Fly.	Customs Amendment Ordinance No. 2 of 1920—Notice No. 7 of 1930.
6. Cotton seed cake, meal, and other products. Cotton lint, or other parts of the plant, plants or parts of any other malvaceous plants, fertilisers & feeds containing cotton seed meal, baling material, agricultural produce—bags, etc.	Cuba, Haiti, Santo Domingo, United States of America, Mexico, parts of Central America as far South as Costa Rica.	Cotton boll weevil.	Proclamation of 21.8.37. (S.R. & O. No. 33 of 1937).

* A Certificate of Origin is necessary for the non-prohibited countries.

B. *Prohibited articles except under licence and specified provisions.*

Articles Prohibited.	Country of Origin.	Reasons of Prohibition.	Index of Legislation.
1. Sugar-cane, corn, sorghum, fodder, grasses and seeds of grasses. (Natural Order—Graminae).	Any place beyond the limits of the Colony.	Mosaic disease of cane.	Proclamation No. 6 of 1921.
2. Coconuts, Coconut plants, or any parts thereof.	From any place.	Red Ring disease, other diseases.	Proclamation No. 2 of 1924.
3. Cotton seeds, seed cotton.	From any place.	Pink Boll worm, other pests or diseases.	Proclamation No. 3 of 1924.
4. Citrus plants, fruits and any parts thereof.	From any place.	Citrus Canker, citrus black fly, & general precautions.	Proclamation No. 3 of 1927.

C. *Permitted articles, provided these have passed inspection by the Agricultural Department or are otherwise authorised to be imported.*

Articles Permitted.	Country of Origin.	Index of Legislation.
1. Garden seeds, (not including corn, grasses, etc.)	From any place.	Plants Protection Ordinance, No. 14 (1916 Rev.)
2. Plants, root-stocks, nuts, tubers, bulbs. cuttings, etc., free from soil, and not included under "A" and "B".	—	—

II. INTERNAL (a)—EXPORT PROHIBITIONS.

Prohibited Exports.	Destination.	Index of Legislation.
1. Specified Fresh Fruits, nuts and Vegetables e.g. limes, oranges, grapefruit, lemons, mangoes, avocados, papaws, pineapples, bananas, tangerines, mandarines, melons, tomatoes, carrots, string beans, egg-plants, cucumbers, okra, pumpkins, cabbages, peppers, etc., unless under the certificate of the Chief Fruit Inspector.	All countries— *Exceptions:* —West Indies (not Bermuda). —Limes to U.S.A.	Ordinance No. 13 of 1930, Amendment Ordinance No. 1 of 1933, No. 17 of 1933 and No. 3 of 1934. Notice No. 4 of 1930 Order No. 5 of 1930, No. 3 of 1931. Rules No. 6 of 1933 and No. 6 of 1934.
2. Bananas—"Gros Michel" except through St. Lucia Banana Association, or rejected and non-required fruit; and except "Cess" paid 1*d.* per count bunch on above.	To any place.	Ordinance No. 1 of 1934. Amendment Ordinance No. 16 of 1934. No. 11 of 1935. No. 3 of 1936. Regulation No. 20 of 1936.
3. Lime seeds, not in fruit or dried.	To any place.	Notice No. 6 of 1935 (Customs Ordinance No. 109, 1916 Rev.)
4. Agricultural Export products unless specified duty paid.	To any place.	Ordinance No. 11 of 1926. Amendment Ordinance No. 20 of 1926 and No. 9 of 1929.
5. General planting material if notified as not conforming to overseas conditions.	To any place.	Customs Ordinance No. 109, 1916 Rev.: Requires Export certificates to United Kingdom etc.

(b)—CONTROL OF DISEASES AND PESTS WITHIN THE COLONY.

Notifiable Diseases and Pests.	Locality.	Index of Legislation.
1. *Cuscuta spp.* "Dodder".	Generally	Plants Protection Ordinance, No. 14, 1916 Rev. and Amendment Ordinance, No. 3 of 1931.
2. *Loranthaceae spp.* "Bird Vine", Mistletoe.	,,	Proclamation No. 34 of 1919.
3. Coconut Budrot.	,,	Proclamation No. 34 of 1919.
4. Panama disease, Marasmius disease, Banana Borer and Weevil.	,,	Proclamation No. 4 of 1924, Rules No. 8 of 1924, No. 15 of 1924 and No. 15 of 1926.
5. Pink Boll-worm, Cotton Stainer, and Leafblister Mite.	,,	Proclamation No. 4 of 1926.

2. Animal Quarantine.

I. EXTERNAL.—IMPORT PROHIBITIONS.

Prohibited Importation.	Country of Origin.	Reasons.	Index of Legislation.
1. Animals and birds, etc.; Manure, fodder and litter, unless provided with Veterinary Certificate and local inspection certificate.	All places	Prevention of Animal diseases	Ordinance No. 3 of 1935 Notice No. 8 of 1930.
2. Bees or hives.	,,	Prevention of Foul Brood disease	Ordinance No. 18, 1916 Rev. Amendment Ordinance No. 13 of 1928.

II. INTERNAL.—CONTROL OF ANIMAL DISEASES WITHIN THE COLONY.

Notifiable Diseases.	Measures.	Index of Legislation.
Anthrax, Rinderpest, Contagious Pleuro-Pneumonia, Glanders, Epizootic Lymphangitis, Foot-and-Mouth disease, Sheep Pox, Bovine and Caprine Contagious Abortion, Tuberculosis, Swine Fever, Rabies, Mange, Sheep-scab, etc.	Destruction, disinfection, isolation, regulation of movement.	Ordinance No. 3 of 1935.

3. Miscellaneous Legislation affecting Agricultural Industries.

Measure.	Object.	Index of Legislation.
1. Board of Agriculture	Advisory authority on Agricultural matters	Ordinance No. 9 of 1933. Amendment Ordinance No. 27 of 1933.
2. Crown Lands	Land Settlement, Allotment & Sale, Water Reserves, Timber. See also 3 (*b*). (All allotments now require approval of Superintendent of Agriculture).	Ordinance No. 45 of 1916 Rev. Amendment Ordinance No. 17 of 1926.
3. *Protection.*		
(*a*) Minor Products Protection	Prevention of Praedial Larceny	Ordinance No. 13 of 1916 Rev. Amendment Ordinance No. 15 of 1923 and Criminal Code, 1920.
(*b*) Timber Protection	Regulation of Deforestation	Ordinance No. 22 of 1918.
(*c*) Turtle & Fish	Close Season	Ordinance No. 19 of 1916 Rev.
(*d*) Wild Birds Protection	Close Season; Licences to Export	Ordinance No. 20 of 1916 Rev.
4. Labour conditions	Regulation of Minimum Wage (Agricultural)	Ordinance No. 5 of 1935. Order No. 55 of 1936. Ordinance No. 3 of 1937.
5. Public Health	Animal-keeping, & sale of animal products	Ordinance No. 17 of 1931. Rules 11 of 1922: 4 of 1935: & Reg. 57 of 1936.
6. Cess of Lime products	Contribution to Entomological service	Ordinance No. 8 of 1937.

APPENDIX I.

REPORT ON THE WORK OF THE GOVERNMENT MARKETING DEPOT.

1. Inspection of Export Produce.

The important work of inspection of produce, other than bananas and limes for export to the United States of America was continued throughout the year, the Inspection Staff being comprised, as before, of the Manager of the Depot as Chief Fruit Inspector together with the two Agricultural Officers. A total of 15,037 packages was inspected (1936—14,939 packages), and inspection fees collected amounted to £65 7 1 (1936—£67 19 8).

The thanks of the Inspection Staff are again due to exporters for their cordial co-operation during the year. Five licensed packing houses were in operation in Castries in addition to the two sheds controlled by the Depot.

2. Depot Operations.

The Depot continued to be used freely, chiefly by the smaller exporters who do not maintain their own packing houses; the larger exporters used the Central Packing House for grapefruit shipments, and occasionally when pressed for space on their own premises. Products handled were limes, grapefruit, oranges, mangoes, avocado pears, pineapples, pumpkins and miscellaneous vegetables.

(a) EXPERIMENTAL SHIPMENTS OF FRUIT FROM THE DEPOT.

Early in February a shipment of 63 cases of grapefruit comprising 59 cases of Marsh seedless and 4 cases of Foster's Pink, grown at the Union Experimental Station, were sent to London consigned to Messrs. Geo. Monro of Covent Garden. The results were disappointing, an average price of 6*s.* 5*d.* per crate being obtained; of more value, however, was the report on the fruit and the packing, which clearly demonstrated that the appearance, selection, packing, etc., was entirely satisfactory; the following notes extracted from the report, should prove of interest:—

"*Package.* The case is good, sound and clean, and, so far as the "fruit we have received is concerned, very well wired.

"*Condition and Quality.* The condition on arrival was undoubtedly "good. The fruit is of good heavy weight with a very good juice "content, which is quite sweet; but the flavour is not particularly "marked. We have the impression that this is because the fruit is off "young trees and that the flavour will strengthen and improve as the "trees grow older . . . . . .

"The Foster Pink has a better flavour than the seedless".

No other experimental shipments were made in 1937; plans for mango shipments had to be cancelled owing to the fact that brokers were unwilling to handle larger lots than 50 lugs at one time, and it was not possible to obtain cold storage space for this small quantity on the one line of steamships available.

(b) Depot Finances.

As stated in the 1936 Report, the Depot was included in the Colony's Estimates for 1937 in accordance with the condition of the original Grant from the Colonial Development Fund.

Details of expenditure are as follows:—

	£	*s.*	*d.*
Personal Emoluments	98	0	0
Labour	19	14	6
Part cost of running lorry	15	5	0
Wages of driver	10	0	0
Maintenance of packing house	8	9	3
Shipments and marketing	19	2	4
Total ...	£170	11	1

In addition to the above, the revolving stock account, under an Advance account from the Treasury, was operated for the purchase of packing materials; the maximum authorised expenditure was £350.

The Balance Sheet for the year ending 31st December, 1937 is presented below, and shows a credit balance of £62 19 1 (1936—£86 4 4) which was credited to General Revenue. No change was made in the scale of charges in force during 1936.

BALANCE SHEET—PURCHASE AND SALES OF CRATES ACCOUNT.

Dr. Particulars.	Amount. £ s. d.	*Cr.* Particulars.	Amount. £ s. d.
Stock on hand at 1.1.37 ...	223 18 8	Cash Sales	422 12 8
Outstanding A/cs. at 1.1.37 ...	11 8 2	Outstanding A/cs. ...	14 4 11
Purchases and Labour, etc. ...	302 2 6	Shortage	10
Export Duty and Stamps ...	25 17 6	Stock on hand at 31.12.37 ...	193 12 3
Surplus Stock at 31.12.37 ...	4 3 11		
Balance Credit	62 19 11		
	£630 10 8		£630 10 8

APPENDIX II.

GOVERNMENT ICE AND COLD STORAGE PLANT.

The plant continued to be used for the precooling of export and for local cold storage, the revenue from these items being £204 1 4, or £24 1 0 less than in 1936. Revenue from ice sales amounted to £232 17 9 (1936—£238 4 10); 149 3/10 tons of ice were manufactured during the year.

The statement of the working of the plant for 1937 is shown below:—

Dr. Particulars.	Amount. £ s. d.	*Cr.* Particulars.	Amount. £ s. d.
Salaries	164 0 0	Ice Sales	232 17 9
Labour and Mechanic ...	134 8 2	Rent	6 17 6
Fuel and Oil	282 2 6	Precooling	10 13 5
Stores and Spares ...	48 12 8	Battery Charging ...	14 10 0
Contingencies	9 8 10	Cold Storage dues ...	193 2 3
Refund—Battery Charging ...	7 5 0		
Total Expenditure ...	£645 17 2	Total Receipts ...	458 0 11
		Outstandings:—	
		Ice Sales	5 14 4
		Cold Storage dues ...	75 11 5
		Stock on hand:—	
		Ice	9 4 0
		Unused Fuel ...	1 7 0
		Unused Stores (approx.) ...	92 13 9
		Debit Balance ...	3 5 9
	£645 17 2		£645 17 2

In January the plant was inspected by Mr. C. T. Watts, Engineer of the Imperial College of Tropical Agriculture. As a result of this inspection and subsequent report, it was found possible to undertake certain much needed improvements to the plant as a whole, with consequent increase in general efficiency: the suggestion that the plant should be electrified also received consideration, and resulted in arrangements being made for the conversion to electric drive in 1938: this step should result in better and

cheaper running of the plant, and at the same time it will enable the Castries Town Board to give the community a full 24 hour electric service instead of the fourteen hour service now enjoyed.

APPENDIX III.

REPORT ON REUNION ESTATE, LAND SETTLEMENT, AND CHOISEUL VILLAGE EXTENSION.

Two lots out of the total of 46 still remain unsold. No additional land was allotted during the year. In the Choiseul Village Extension 11 lots out of 19 remain unsold and £5 12 0 was collected during the year.

APPENDIX IV.

THE MURRAY ROAD AND LAND SETTLEMENT SCHEMES. COLONIAL DEVELOPMENT FUND.

Pending final approval of the modified Scheme of Land Settlement as mentioned in the 1936 Report, work for the first few months of the year was continued as in 1936 i.e. Nursery Maintenance, Panama Disease Control, and such measures as were possible to prevent further squatting and timber cutting in the area. The modified scheme received final approval in June and for the remainder of the year increased work was done in the Nursery and on tracing of tracks, etc.; escheat proceedings were expected to terminate early in 1938 which would then enable work on sub-division of the area to be started.

Expenditure under this head for the year amounted to £589 17 7, and revenue, placed to a Deposit Account for utilisation at a later date, amounted to £63 7 7 mainly from sale of bananas grown at the Nursery.

Work commenced in July on the construction of the Murray Road: this work is under the direction of the Public Works Department, and, according to the Report of the Colonial Engineer for 1937, by the end of the year some $7\frac{1}{2}$ miles of earthwork had been completed, $1\frac{1}{4}$ miles of road having been metalled and oiled; in addition, the abutments of the bridges over the Mahaut and Troumassée Rivers were also completed.

APPENDIX V.

CROWN LANDS; ANTI-SOIL EROSION MEASURES.

(a) Crown Lands.

During 1937 a total of 44 applications for Crown Lands were received from the Crown Lands Department for consideration: of these, 28 were approved and 15 rejected, while 1 was still awaiting inspection at the end of the year. Areas involved were as follows:—

28 applications approved representing 176 acres.
15 applications rejected representing 110 acres.
1 still under consideration representing 100 acres.

(b) Anti-Soil Erosion Measures.

Efforts were made during the year to arouse more interest in this important subject, and work done comprised demonstrations at the Department Nurseries and, when possible, on peasant holdings, of proper methods of terracing, contour draining, contour banking, and other measures; opportunity was also taken of addressing a few meetings in the country villages for the purpose of explaining fully the measures recommended, such talks being followed up by demonstrations. It is hoped that, with this work once started, it will be possible to continue and expand on it in future years, if only to prepare the people for the rigid measures that must of necessity be enforced in any Land Settlement Schemes that are set going in the future.

APPENDIX VI.—METEOROLOGICAL OBSERVATIONS.

STATION, CASTRIES, St. LUCIA, B.W.I.

ht.=3′ 0″ *hr.*=1′ 0″. STATION CASTRIES.

Month.	Rainfall (inches)			Weather.		Wind. No. of Observations. (at 7 a.m., 12 noon, & 5 p.m.)								
	Total	Max.	Date	Days of Rain	Days of Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
January ...	7·95	2·50	22nd	31	0	2	14	44	17	2	1	7	4	2
February	2·37	1·01	20th	20	0	1	4	45	18	4	5	4	—	3
March ...	1·59	·27	5th	17	0	3	7	43	18	5	3	4	5	5
April ...	1·61	·60	30th	12	0	4	8	49	12	3	5	1	3	5
May ...	·97	·29	8th	8	0	1	9	62	15	—	4	—	—	2
June ...	5·69	1·04	19th	18	0	—	1	71	16	—	—	—	—	2
July ...	8·20	1·29	4th	26	0	—	1	66	9	—	—	1	—	16
August ...	6·06	1·43	23rd	23	0	—	4	61	18	1	—	—	—	9
September	5·48	1·32	22nd	17	0	—	2	50	13	2	—	4	2	17
October ..	7·47	1·87	5th	16	0	—	1	69	11	3	3	—	—	6
November	10·90	2·65	10th	25	0	—	6	62	10	—	2	—	—	10
December	4·49	·69	27th	23	0	—	5	54	19	4	4	—	—	7
Year ...	62·78	2·65	10th Nov.	236	0	11	62	676	176	24	27	21	14	84

ht.=Height of therm. above the ground in feet. hr.=Height of the rainguage above the ground in feet.

LONGITUDE=60° 59′ 49″ W. LATITUDE=14° 0′ 36″ N. HEIGHT ABOVE SEA LEVEL =10ft.

Month.	Air Temperature.				Absolute Max. and Min.				Relative Humidity (% Regnault's factor.)		
	7 a.m.	12 noon	5 p.m.	Mean	Max.	Date	Min.	Date.	7 a.m.	12 noon	5 p.m.
January ...	71·5	77·6	74·7	74·6	86	30th	64	7th	90	74	82
February ...	70·1	78·6	74·8	74·5	85	4th	64	2nd	95	83	81
March ...	71·8	79·9	77·2	76·3	85	1st	66	6th	99	70	73
April ...	74·1	81·4	78·0	77·8	87	13th	66	3rd	99	63	74
May ...	75·6	83·2	80·5	79·8	91	24th	68	30th	99	64	74
June ...	76·8	81·8	79·7	79·4	88	10th	69	7th	82	71	74
July ...	75·5	81·5	80·1	79·0	88	29th	70	1st	99	70	74
August ..	75·3	84·2	81·2	80·2	90	24th	70	4th	99	68	74
September	74·3	83·3	81·3	79·6	92	18th	71	2nd	99	71	74
October ...	74·0	84·5	80·5	79·6	92	3rd	67	27th	100	69	79
November	72·9	83·8	80·3	79·0	90	6th	69	18th	100	72	79
December ...	72·0	81·8	78·4	77·4	89	7th	64	14th	100	71	78
Year ...	73·7	81·8	78·9	78·1	92	18th Sept 3rd Oct	64	7th Jan. 2nd Feb. 14th Sept.	97	70	76

METEOROLOGICAL CONDITIONS.

Rainfall: The total recorded at the Botanic Gardens, Castries, for the year 1937, was 27·71″ below that of the previous year, and 27·36″ below the average rainfall for 48 years (1890 –1937), the average for the 48 year period now being 90·14″ per annum. Maximum precipitation for Castries occurred on November 10th when a total of 2·65″ was recorded. The highest maximum precipitation for the Colony in general was 4·25″ recorded on January 22nd. Distribution of rainfall was again irregular, starting with a very wet January and then falling off to an extremely dry May; for the remainder of the year the monthly rainfall curve followed the average (48 years) curve fairly closely, though averaging some 3 inches less.

Weather: A year of abnormal weather conditions was experienced, the deficiency of rainfall making 1937 the driest year on record. Drought conditions were acute during the past six months, rendering planting operations difficult; the one beneficial effect of the dry year was the freedom from flooding usually experienced. There were comparatively few thunderstorms but high winds did some damage to crops during the latter months.

Temperature: The mean noon shade temperature was 81·8° F., the maximum temperature was 92° F., and the minimum temperature was 64° F., a decrease range of 28°. Temperatures were somewhat higher than 1936, the months of September, October and November being particularly warm. Humidity was slightly lower.

Stations: The number of rainfall stations recording during the year was 36.

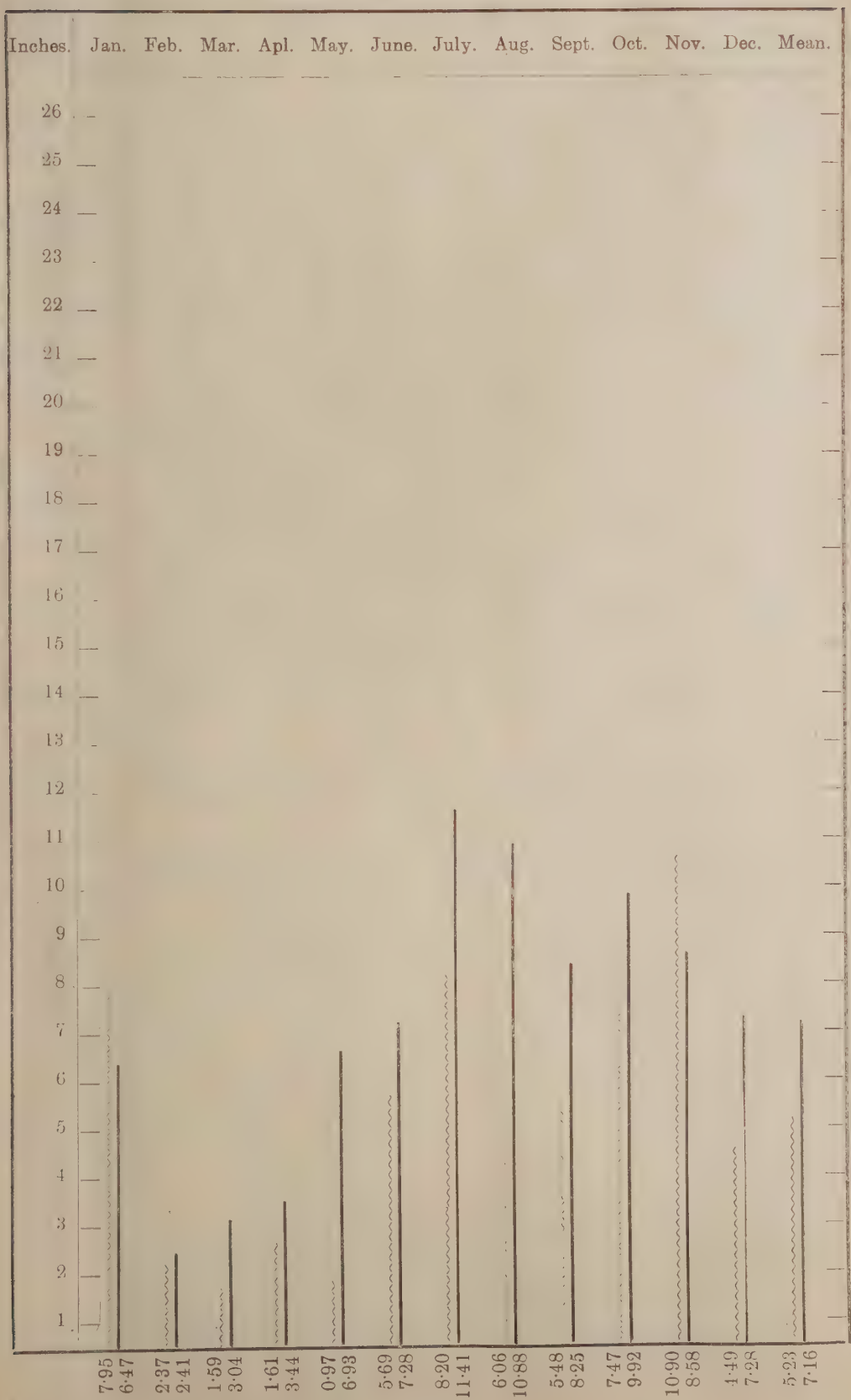
APPENDIX VI.

RAINFALL RETURNS, 1937.

Observation Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Maximum in one day and date.		No. of days of rain.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.		
Gros Islet, Reduit Estate	7·61	3·12	1·31	1·61	1·07	4·86	4·56	5·95	5·41	8·60	6·83	2·23	53·19	2·55	16th Oct.	148
Castries, Corinth . ..	11·32	4·15	2·78	2·72	...	5·21	4·69	7·73	4·59	10·45	8·68	4·95	67·47	2·86	..	127
Marquis Estate ...		3·30	1·35	1·61	1·37	5·96	8·53	4·31	6·99	12·81	14·05	4·18	64·46	3·86	10th Nov.	199
*Union Experiment Stn.	10·77	4·32	2·48	2·00	2·12	6·92	6·80	5·02	4·59	9·95	11·58	5·40	71 95	2 32	..	253
Choc Estate .	6·95	3·26	1·55	1·28	·73	4·88	4·39	5·72	4·76	7·23	7·19	2·48	50·42	2·23	23rd Aug.	189
*Botanic Gardens ...	7·95	2·37	1·59	1·61	·97	5·69	8·20	6·06	5·48	7·47	10·90	4·49	62·78	2·65	10th Nov.	236
The Barracks, Vigie	9·10	3·77	1·71	1·78	·73	5·47	5 28	6·16	5·78	6·46	8·70	4·20	59·14	2·44	5th Oct.	179
Soucis Est., Cul-de-Sac	14·84	4·17	1·28	...	·56	8·03	6·96	5·72	5·45	9·59	7 01	5·13	68·74	3·29	17th Oct.	134
Mont D'Or Est., Roseau	13·13	...	...	...	...	...	...	5·63	...	8·53	...	...	27 29	2·73	22nd Jan.	63
Belair Estate, ,, ...	10 46	...	2·14	1·57	1·36	5·33	...	...	...	8 06	9·67	6·68	45 27	2·38	28th Dec.	141
Vanard ,, ,, ...	11·14	4·14	2·47	2·68	1·95	6·56	6·88	5·51	6·41	8·07	10·55	5·30	71·66	2·95	22nd Jan.	125
Roseau	9 91		2·06	1 42	1·11	6·66	.	4 70		8·12	8·46	6·64	49·68	2·60	27th Dec.	141
*Barre de l'Isle Nursery	16·95	5 77	3·19	3·62	4·26	7·72	8·14	7 26	11·37	14·99	15·38	8·27	106·92	4·15	22nd Jan.	295
Ravine Poisson Estate	14·05	5·35	3 10	2·60	4 25	5·20	..	.	...	..	...	...	34·55	4·25	..	103
Soufrière, La Perle Estate	13·26	2·55	1·25	1·60	·59	11·04		...	7·74	8·44	10·33	6·81	63·61	3·15	27th Sep.	127
Ruby Estate ...	15 44	2·59	2·36	1·81	1·20	10 13	6·44	7·11	10·09	7·59	9·38	6·41	80·55	3·06	28th Sep.	117
Fonds Doux Estate ...	11·20	3·03	...	2·75	1·40	9·25	6·29	6·65	12·60	8·09	9·18	5·71	76 17	3·55	26th Sep.	211
Union Vale ..	11·43	1·81	1·18	2 07	1·74	7·82	4·00	4·85	8·75	6·64	8·05	4·41	62·75	2·70	..	141
Beausejour .. .	13·82	4·01	2·72	3·94	2·42	9·82	6·97	7·02	11·09	8·70	11·60	8·93	91·04	2·58	..	293
Belle Plaine ..	15·15	5·23	3·85	4·80	2 69	11·66	7·70	7·72	11·54	8·84	11·59	9 39	100·16	2·67	19th June	297
Rabot Estate ...	12·76	2·93	2·58		1 73	10·73	7·06	7·42	12·94	8·66	10·22	..	77·03	3·34	27th Sep.	288
*Rabot Nursery ..	12 42	3 26	2·40	3·23	1·78	10·73	7·06	7·42	12·94	9·19	9·89	...	80·32	3·34	..	248
*Quilesse Station ...	19·75	8 24	6·94	6·31	6·24	15·79	13·81	15·89	15·72	15·44	16·00	17·90	158·03	3·05	13th June & Sep.	275
Choiseul, Morne Lezard Est.	9·94	2 83	1·90	...	.	7·89	4·49	5 48	4·35	7·84	10·20	5·64	60·56	2·40	28th Nov.	152
Park Estate	11·29	2 61	3·35	2·58	1·96	8·48	6·56	5 89	5·21	9·94	12·42	8·14	78·43	2·70	22nd Jan.	206
Woodlands Estate ...	18·63	6·06	3·42	2 32	1 33	9·83	9·07	6·41	7·16	9·58	13·23	8·75	95·79	3·84	.	247
Londonderry Estate ..	10·58	3·41	2·85	1·51	1·76	6 63	4 72	3·43	3·03	6·49	10·76	7·75	63·92	3·07	10th Dec.	205
Laborie, Giraud Estate ..	12·56	2·97	3·37	2·91	1·82	8·01	6·27	5·90	4·66	11·82	13·15	8·01	81.45	3·30	22nd Jan.	176
Black Bay Estate ...	7·13	2·17	1·61	1·03	1·51	5 22	5·19	5·71	2·21	6·71	9·59	3·41	51·51	2·00	28th Nov.	110
Vieux-Fort, Retraite Est.	8·44	2.65	1·22	1·17	1·08	6 24	5·34	4·49	2·66	4·92	10·26	3·88	52·71	2 90	..	135
Moule-à-Chique .	7·01	2 61	·89	·81	1·72	4·58	3·35	2·93	4·20	6·51	7·65	2·01	44·27	2·44	11th Oct.	73
Pointe Sable Estate ...	7·40	·37	·50	·26	1·19	4·26	2·85	3·96	3·02	6·81	9·30	2·42	42·34	2·47	..	79
Micoud, Trumasse Est.	8·31	..	·75	...	...	4·10	4·15	3·50	7·65	12·08	10·05	3·65	54·54	3·95	13th Nov.	73
Dennery, Mamiku Estate	9·21	3·07	1·36	1·72	·83	1·63	3 86	4·11	4·16	9·52	10·06	4·20	56·73	3·88	10th Oct.	213
Prospect	14·15	3 75	2·75	2·83	2·12	6·31	6·21	6·10	9·83	11·01	11·68	7·65	84·72	3·90	22nd Jan.	265
Border ,, ...	10 75	2·49	2·20	2·46	2·62	6·26	5·73	5·01	9·99	8·92	9·40	3·01	68·84	3·67	..	257

APPENDIX VII.

GRAPH OF MONTHLY RAINFALL—48 YEARS (1890—1937) CASTRIES, ST. LUCIA, B.W.I.



Legend.

——— Average for 48 years.

..... Rainfall during 1937.

REVISED PRICES OF NURSERY PLANTS AND SUPPLIES.

1. The prices of plants do not include the cost of the box or package, for which a charge will be made if not returned to the Department. The cost of delivery is usually included in the prices. Exceptions to this rule will be made at the discretion of the Agricultural Superintendent.

2. All prices specified are for plants of standard quality. The prices of plants not included in this will be fixed by the Agricultural Superintendent.

3. An addition of 100% is made on the price of all plants supplied for export from the Colony.

4. No plants are supplied on Public Holidays.

5. At least six months previous notice must be given when large numbers of such plants as bananas, coconuts, coffee, cacao, nutmegs, citrus, cane plants, &c., are required. All such orders should be in writing, and verbal or telephone messages should be confirmed in writing. In default of this rule such orders may not be attended to.

6. All orders will be supplied subject to the discretion of the Agricultural Superintendent and no responsibility is taken in regard to quality or quantity of plants after despatch from the Nurseries.

7. Complaints as to the quality of plants, &c., supplies, or as to the prices charged, should be made in writing to the Agricultural Superintendent at the time of delivery.

PLANTS.

	s.	*d.*	
Banana Plants (sections or suckers)		1	per plant (undelivered).
Oranges Budded		3	per plant.
Oranges Sour		6	per hundred.
Grapefruit Budded		3	per plant.
Lime Plants Budded/Grafted		3	per plant.
Mangoes Budded/Grafted		6	to 1*s.* per plant.
Coffee Plants	1	0	to 2*s.* per hundred.
Cacao Budded		2	per plant.
Nutmegs Grafted		6	per plant.
Avocado Pears Grafted		2	to 3*d.* per plant.
Cane Plants	1	0	per hundred (undelivered).
Pineapple Plants		1	to 3*d.* per plant.
Eucalyptus	2	0	per hundred.
Casuarina	2	0	per hundred.
Palms (various)		3	per plant.
Ornamental Plants (various)		2	to 1*s.* per plant.
Seeds (various)		2	and 3*d.* per packet.
Plants for windbreaks, hedges, &c., other than the above mentioned	2	0	per hundred.
Grass and Fodder Plants	1	0	to 2*s.* per hundred (undelivered).
Cover Crops and Green Manures		2	per lb.

— BANANAS —

A LIST OF "DON'TS" FOR THE GROWER AND DEALER.

DON'T cut your bananas before the THURSDAY of the shipping week or more than 48 hours before shipment. Stale fruit will not be accepted by the Association.

DON'T try to sell poor short-fingered bananas; it is a waste of time as they will not be accepted. Fingers must be at least seven inches long, and the weight of the bunches should be as follows :—

9 hand—not less than 55lb.
8 hand—not less than 45lb.
7 hand—not less than 35lb.

Good heavy bunches can be obtained by proper cultivation, manuring, and pruning.

DON'T truck scarred fruit to town; scarring can be prevented by removing the flower stalk or 'navel' as soon as the bunch is properly formed, and also by cutting off all leaves that are touching the bunch. Use a cocoa knife for trimming the leaves.

DON'T allow your bananas to be bruised in any way. A bruised bunch is a rejected bunch. When placing a bunch on the ground, see that it rests on a thick bed of banana trash. When heading, use a soft pad of trash. When trucking, see that the truck is well padded on bottom and sides, and also place layers of trash between each layer of bunches in the truck. **Damp or wet trash is softer and less liable to bruise the fruit than dry trash.**

DON'T pack bunches loosely so that they rub against one another and get bruised.

DON'T drive fast over rough roads. A truck load of bananas for export should be treated as gently as a basket of eggs.

DON'T cut your bunches too full or too thin. Such bunches are not wanted, nor are badly-shaped bunches with loose fingers.

DON'T forget to seek the advice of the Officers of the Agricultural Department. **THEY CAN HELP YOU.**

Department of Agriculture,
St. Lucia.
September, 1937.

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